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EDITED BY

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SECRETARY TO THE ZOOLOGICAL SOCIETY OF LONDON,
AND
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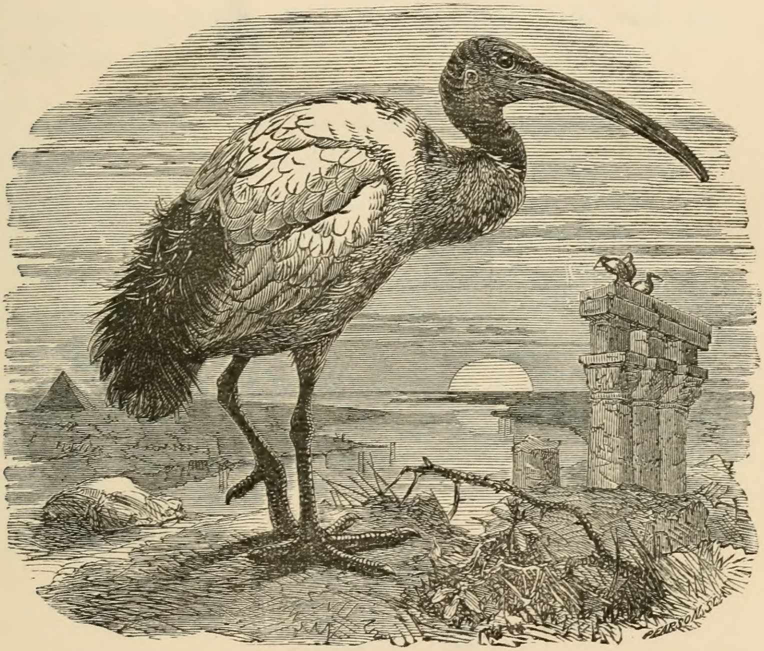

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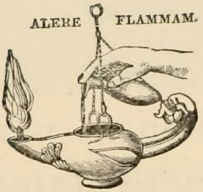
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PREFACE.

THE Editors have now the pleasure of presenting to the Members of the B. O. U. the twenty-ninth volume of 'THE IBIS,' which in value and interest will, they trust, be found not unworthy to take rank with its predecessors.

Although some of the older Members have discontinued their ornithological work, others have taken their places, and the Editors have found no lack of contributions during the year. They are glad to say that there is already in hand nearly sufficient MSS. for the next Number, while other good papers are promised. Amongst the latter the Editors hope to include a general account by Mr. R. S. Wray of his recent researches on the Structure of the Bird's Wing, which they consider to be one of the most important contributions made to ornithological science during the past year.

P. L. S.
H. S.

London, October 1st, 1887.

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ERRATA.

Page	Line
18,	15 from bottom, for *Calaphantria* read *Calyphantria.*
26,	14 from top, for *Hyphornis* read *Hyphantornis.*
29,	17 from bottom, for *brantii* read *brandtii.*
30,	16 from bottom, for *Tentor* read *Textor.*
32,	17 from bottom, for *erythrothalma* read *erythrophthalma.*
112,	top line, for *Socicty's* read *Society's.*
115,	18 from top, *for* Northamptonshire *read* Nottinghamshire.
182,	18 from top, *for* ARQUATUS *read* ARQUATA.
276,	17 from top, *for* 1871 *read* 1761.
286,	2 from bottom, for *arquatus* read *arquata.*
302,	5 from top, for *rogallo* read *urogallo.*
356,	17 from top, for *gaidnerii* read *gairdnerii.*

THE IBIS.

FIFTH SERIES.

No. XVII. JANUARY 1887.

I.—*A Review of the Species of the Family* Ploceidæ *of the Ethiopian Region.* By Captain G. E. Shelley, F.Z.S.—Part II. Ploceinæ.

(Plates I. & II.)

[Continued from 'The Ibis,' 1886, p. 359, and concluded.]

The second subfamily of the Ploceidæ, *Ploceinæ,* is distinguished by the larger size of the bastard primary, which is never very sharply pointed; the tail always square or rounded, never elongated nor graduated; the claws always of moderate length, strong, and much curved.

The species of this group generally build in colonies, and with few exceptions their nests are hung from the ends of boughs or reeds, and are spherical, with an elongated entrance.

The members of this subfamily run so closely into each other that I have only been able to base four genera upon structural differences, but have considered it advisable to recognize two others, *Plocepasser* and *Malimbus,* separated solely upon style of colouring, as they are well-marked divisions and have been generally accorded generic rank.

The genus *Ploceus* includes a large number of more or less well-marked "groups." This term I prefer to subgenera, as it does not necessitate the invention of new Latin names, which I have no intention of employing; but a comprehension of these groups will greatly simplify the classification which I here propose.

Key to the Genera of PLOCEINÆ.

a. With the base of the culmen forming an angle on the forehead in front of the eyes.
  a^1. Nostrils touching the frontal feathers.
    a^2. Nostrils entirely covered by the frontal feathers. Tail extending beyond the wings by more than 1½ length of tarsus. Underparts white; back earthy brown; forehead black, with the feathers edged or tipped with white. Small: wing rarely exceeds 2·5 inches in length. Sexes similar in plumage .... 19. *Sporopipes*, p. 3.
    b^2. Nostrils exposed. Tail shorter, never extends beyond the wings by 1½ length of tarsus, rarely by so much as the length of the tarsus. Sexes generally dissimilar in plumage.
      b^3. Entire underparts nearly white; upper back uniform earthy brown; entire crown uniform black or rufous. With a broad white eyebrow .... 20. *Plocepasser*, p. 4.
      c^3. Never with a broad white eyeberow. Never with the entire plumage black and red .... 21. *Ploceus*, p. 6.
      d^3. Entire plumage black and red........ 22. *Malimbus*, p. 39.
  b^1. Nostrils not sufficiently basal to touch the frontal feathers. With no yellow on the plumage. Large: wings over 4 inches in length. Sexes similar in plumage ...... 23. *Textor*, p. 42.
b. With the base of the culmen not forming an angle on the forehead in front of the eyes, but extending back in a rounded ridge to a line with the eyes. Bill very stout, culmen evenly curved. Forehead and base of primaries white in adults. Sexes similar in plumage .... 24. *Amblyospiza*, [p. 44.

19. SPOROPIPES.

1847. *Sporopipes,* Cab. Arch. f. Naturg. 1847, p. 332 . . . . Type. *S. squamifrons.*

This is a well-marked genus; the covering of the nostrils by feathers is a character entirely peculiar to it, and it shows no very close affinities to any other of the genera. The nest, which I believe to be well figured in Smith's Ill. Zool. S. Afr., much resembles that of an *Estrelda*; but the structural characters of the two species, especially the possession of a large bastard primary, refer them to the present subfamily.

Key to the Species.

a. Smaller. Back of the head and nape of the same colour as the mantle .... 108. *S. squamifrons.*
b. Larger. Back of the head and nape rufous, mantle paler brown .... 109. *S. frontalis.*

108. SPOROPIPES SQUAMIFRONS.

Estrelda squamifrons, Smith, Rep. Exp. Expl. Centr. Afr. 1836, p. 49.

Fringilla lepidopterus, Licht. 1842, fide Bp. Consp. i. 1850, 1836, p. 444.

Euplectes lepidopterus, Hartl. Syst. Verz. Brem. 1844, p. 69.

Amadina squamifrons, Smith, Ill. Zool. S. Afr. 1844, pl. 95.

Sporopipes lepidopterus, Cab. Arch. f. Naturg. viii. 1847, p. 332.

Philæterus squamifrons, Strickl. & Sclater, Contr. Orn. 1852, p. 150.

Sporopipes squamifrons, Sharpe, Cat. Afr. B. 1871, p. 61.

Hab. S. Africa: Matabele, Bamangwato, Transvaal, Orange river, Great Namaqua, Damara, and Benguela.

a, b. September and October, Matabele-land. *c.* January, Rustenburg. These are all in full plumage.

109. SPOROPIPES FRONTALIS.

Loxia frontalis, Daud. Traité Orn. ii. 1880, p. 445, Senegal.

Sénégali à front pointellé, Vieill. Ois. Chant. 1805, p. 39, pl. 16.

Fringilla frontalis, Vieill. N. D. xii. 1817, p. 181.

Amadina frontalis, Rüpp. Neue Wirb. 1835–40, p. 101.

Estrelda frontalis, Gray & Mitchell, Gen. B. ii. 1849, p. 368.

Sporopipes frontalis, Cab. Mus. Hein. i. 1851, p. 179.

Hab. N.E., E., and W. Africa. South from about 17° N. lat. to Ugogo in E. Africa and Senegambia in W. Africa.

a, ♂ juv. February, Lado. The immature bird has no white spots on the black forehead and moustaches.

20. PLOCEPASSER.

	Type.
1836. *Plocepasser,* Smith, Rep. Exp. Expl. Centr. Afr. 1836, p. 51	*P. mahali.*
1837. *Agrophilus,* Swains. B. W. Afr. i. 1837, p. 209	*P. superciliosus.*
1837. *Leucophrys,* Swains. Class. B. ii. 1837, p. 287, fig. 262 (head)	*P. mahali.*
1851. *Philagrus,* Cab. Mus. Hein. i. 1851, p. 179	*P. mahali.*

The present genus shows, perhaps, slight affinities to *Sporopipes* in its style of colouring. The latter is the sole character on which I have separated it from *Ploceus,* to which it is undoubtedly very closely allied.

Key to the Species.

a. Crown rufous. Rump and upper tail-coverts brown .... 110. *P. superciliosus.*
b. Crown blackish. Rump and upper tail-coverts white.
  *b*¹. With no trace of spots on the throat.
    *b*². Eyebrows, breast, and white on wing-coverts slightly shaded with buff. The white ends to the greater coverts narrower .... 111. *P. mahali.*
    *c*². With no shade of buff on the white portions of the plumage. The white ends to the greater coverts broader .. Subsp. 112. *P. melanorhynchus.*
  *c*¹. With blackish spots on the throat and crop.
    *d*². Bill black. Spots on the throat darker 113. *P. pectoralis.*
    *e*². Bill pale brown. Spots on the throat less distinct .... 114. *P. propinquatus.*

110. PLOCEPASSER SUPERCILIOSUS.

Ploceus superciliosus, Rüpp. Cretzschm. Atlas, 1826, p. 24, pl. 15, Kordofan.

Agrophilus superciliosus, Swains. B. W. Afr. i. 1837, p. 209.

Plocepasser superciliosus, Rüpp. Syst. Uebers. 1845, p. 78.

Passer rüppeli, Bp. Consp. i. 1850, p. 510.

Philagrus superciliaris, Heugl. Orn. N.O.-Afr. 1871, pp. 536, cxxviii.

Hab. N.E. and W. Africa. Between about 16° and 9° N. lat. in E. Africa and Senegambia.

111. PLOCEPASSER MAHALI.

Plocepasser mahali, Smith, Rep. Exp. Expl. Centr. Afr. 1836, p. 51, N. of Orange river; id. Ill. Zool. S. Afr. 1841, pl. 65.

Leucophrys pileatus, Swains. Class. B. ii. 1837, p. 287, fig. 262 (head).

Philagrus mahali, Cab. Mus. Hein. i. 1851, p. 179.

Agrophilus hæmatocephalus, Licht. Nomencl. 1854, p. 50 (type exam.).

Plocepasser pileatus, Layard, B. S. Afr. 1867, p. 187.

Hab. S. Africa, north of about 30° S. lat., Matabele, Transvaal, Griqualand, Damara, Lake Ngami, and Benguela.

There is a black-billed specimen in the British Museum, collected by Mr. Oates in Matabele-land, which is nearly intermediate between this form and *P. melanorhynchus.*

112. Subsp. *a.* PLOCEPASSER MELANORHYNCHUS.

Plocepasser melanorhynchus, Rüpp. Syst. Uebers. 1845, p. 78, Shoa.

Ploceus superciliosus, Des Murs (nec Rüpp.) in Lefèbvre's Voy. Abyss. 1845–50, p. 110, Atlas, pl. 9. fig. 2.

Agrophilus melanorhynchus, Licht. Nomencl. 1854, p. 50.

Plocepasser mahali, Antin. (nec Smith), Cat. 1864, p. 67.

Philagrus mahali, Heugl. Orn. N.O.-Afr. 1871, p. 537.

Philagrus melanorhynchus, Heugl. t. c. p. 538, pl. 31, App. p. cxxviii.

Hab. N.E. and E. Africa. Between about 13 N. lat. and 2° S. lat., from Abyssinia to Ukambani.

113. PLOCEPASSER PECTORALIS.

Philagrus pectoralis, Peters, J. f. O. 1868, p. 133, Inhambani (type exam.).

Hab. S. Africa, from the Zambesi to Inhambani.

In the British Museum there are three specimens from Tette, on the Zambesi; they differ from *P. mahali* in having the bill black, the mantle of a rather more rufous shade, and in the feathers of the crop having large dark brown lanceolate centres.

114. PLOCEPASSER PROPINQUATUS.

Plocepasser propinquatus, Oustalet, MSS. in Paris Mus., Somali.

Hab. E. Africa, Somali.

As I have not seen a printed description of this bird, I here give the notes I took from the type specimen when in Paris last year. Very similar to *P. melanorhynchus,* but differing in the bill being pale brownish, the sides of the head paler, with black sides to the white throat much more distinctly marked. The feathers of the crop with pale brown centres. Wings similar in colouring to *P. melanocephalus,* but about ½ inch shorter. Tail-feathers with broad white ends.

21. PLOCEUS.

		Type.
1817.	*Ploceus,* Cuv. Règne An. i. p. 406	*P. philippinus.*
1837.	*Symplectes,* Swains. B. W. Afr. i. p. 170	*P. bicolor.*
1837.	*Eupodes,* Jard. & Selby, Ill. Orn. pl. 10	*P. bicolor.*
1849.	*Hyphantornis,* Gray, Gen. B. ii. p. 351	*P. cucullatus.*
1850.	*Foudia,* Reichb. Av. Syst. Nat. 1850, pl. 79	*P. madagascariensis.*
1850.	*Nelicurvius,* Bp. Consp. i. p. 439	*P. pensilis.*
1850.	*Sitagra,* Reichb. 1850, fide Cab. Mus. Hein. i. 1851, p. 181	*P. luteolus.*
1851.	*Sycobrotus,* Cab. Mus. Hein. i. p. 182	*P. bicolor.*

1851.	*Hyphanturgus,* Cab. t. c. p. 182	*P. ocularius.*
1860.	*Calyphantria,* Heine, J. f. O. 1860, p. 144 (nom. emend. pro *Foudia*)	*P. madagascariensis.*
1861.	*Ploceolus,* Reichb. Singvög. p. 77	*P. luteolus.*
1861.	*Xanthophilus,* Reichb. t. c. p. 84	*P. aureoflavus.*
1861.	*Oreolinus,* Reichb. t. c. p. 84	*P. subaureus.*
1861.	*Anaplectes,* Reichb. t. c. p. 86	*P. melanotis.*
1874.	*Plocëella,* Oates in Hume's Nests & Eggs Ind. B. ii. p. 443	*P. hypoxanthus.*
1878.	*Sharpia,* Bocage, Jorn. Lisb. 1878, p. 258	*P. angolensis.*
1881.	*Icteropsis,* Pelz. Verh. zool.-bot. Ges. Wien, 1881, p. 149	*P. ocularius.*
1885.	*Melanopteryx,* Reichen. Zool. Jahrb. Jena, i. 1886, p. 125.	*P. nigerrimus.*
1885.	*Cinnamopteryx,* Reichen. t. c. p. 126	*P. castaneofuscus.*

Key to the Groups.

A. Breast grey, pale brown, olive, or red. Sexes dissimilar in plumage	I. *'Foudia' Group.*
B. Breast white. Bill slender and generally orange-red; when blackish the throat is white	II. *Anaplectes Group.*
C. Breast entirely yellow. Entire upper parts and sides of the head black or brownish black. Bill rather slender and bluish, paler towards the cutting-edges. Sexes similar in plumage	III. *Symplectes Group.*
D. Breast yellow or white. Throat yellow. Sides of the head black. Bill black and moderately strong	IV. *Black-eared Yellow-throated Group.*
E. Breast yellow. Sides of the head yellow, with a black band through the eye in both sexes. Males with the throat black; females with the throat yellow. Bill rather slender and black	V. *Hyphanturgus Group.*
F. Entire underparts bright yellow. With no black on the head. Bill black and variable in strength. Sexes similar in plumage	VI. *Yellow Group.*

G. With a large portion of the plumage bright yellow. Portion of the throat and portion of the sides of the head black. Wings brown, the feathers edged with olive or yellow. Sexes dissimilar in plumage.... VII. *Black-headed Yellow Group.*

H. With no yellow on the underparts, which are black or chestnut in adult males. With no red on the plumage .... VIII. *Dark-coloured Group.*

Key to the Species.

A. Foudia Group.

a. Breast grey. Under tail-coverts chestnut.

*a*¹. Crown and sides of the head black...... 115. *P. nelicourvi*, ♂.

*b*¹. Crown and ear-coverts olive shading in yellow in front...................... *P. nelicourvi*, ♀.

b. Breast brown, olive, or red; under tail-coverts never chestnut. Mantle brown, olive, or red, with more or less distinct dark centres to the feathers.

*c*¹. Head and neck yellow. Bill very stout.. 116. *P. sakalava.*

*d*¹. Head, neck, and rump scarlet.

*d*². With no black band through the eye. Mantle olive-shaded brown. Bill stout .... 117. *P. eminentissimus.*

*e*². With a black band through the eye.

*e*³. Mantle red. Bill stouter .... 118. *P. madagascariensis.*

*f*³. Mantle brown. Bill slender ...... 119. *P. ruber.*

*e*¹. Head and neck never uniform yellow. Head, neck, and rump never red. Bill slender.

*f*². Head and throat yellow, shaded with red on the forehead and cheeks...... 120. *P. flavicans.*

*g*². General plumage olive, with the crown and throat shaded with yellow ...... 121. *P. seychellensis.*

B. Anaplectes Group.

a. Bill orange-red. The quills broadly edged with bright yellow or red. The head and neck red in fully adult males.

*a*¹. Quills broadly edged with yellow. Head and neck yellowish in the females.

*a*². With no black on the ear-coverts .... 122. *P. rubriceps.*

*b*². With the ear-coverts black, partially washed with red .... 123. *P. gurneyi.*

*b*¹. Quills broadly edged with red. Sides of the head black .... 124. *P. melanotis.*

b. Bill blackish brown. Quills not edged with yellow or red. Throat white, like the breast. Upper parts blackish brown, with the rump pale yellow; the upper back mottled with white; the median and greater wing-coverts with white ends .... 125. *P. angolensis.*

C. Symplectes Group.

a. Entire upper parts and the throat jet-black . 126. *P. kersteni.*

b. Upper parts dark brown, with narrow whitish edges to the quills. Throat not black.

*b*¹. Feathers of the forehead and throat brown, tipped with white .... 127. *P. stictifrons.*

*c*¹. Forehead uniform brownish black.

*c*². Chin white, shading into yellow on the lower throat. Upper throat occasionally mottled with blackish. Upper half of the head uniform with the back .... 128. *P. bicolor.*

*d*². Throat brown, slightly mottled with whitish. Upper half of the head darker than the back .... 129. *P. amaurocephalus.*

D. Black-eared Yellow-throated Group.

a. Back of the neck and upper back olive. Crown yellow in both sexes .... 130. *P. baglafect.*

b. Crown yellow in male, black in female.

*b*¹. Back of neck and upper back black and ashy brown. Abdomen and under tail-coverts buff .... 131. *P. emini.*

*c*¹. Back of neck and upper back black. The entire underparts bright yellow........ 132. *P. reichenowi.*

E. Hyphanturgus Group.

a. Back, tail, and wings black or brownish black. Males with the sides of the head and crown yellow, the black ocular band scarcely extending behind the eye; females with the crown black and the black ocular band extending back so as to join that colour on the nape, thus forming a distinct yellow eyebrow.

*a*¹. Slightly paler above; rump, tail, and edges of the quills tinted with olive .... 133. *P. nigricollis.*

*b*¹. Back, wings, and tail entirely jet-black . . 134. *P. melanoxanthus.*

b. Back, tail, and wing, when closed, nearly uniform olive. Crown and sides of the head nearly similar in both sexes, the black there being confined to a well-marked ocular band.

c^1. Bill rather more slender. Males with the head slightly paler and with an olive shade on the nape. Females with the crown very similar to the male's; throat and sides of the head more strongly tinted with chestnut .... 135. *P. ocularius.*

d^1. Bill rather stouter. Males with no olive shade on the nape; yellow of the head darker, being more strongly tinted with chestnut. Females with the crown olive, only passing into yellow on the forehead; throat pale yellow; sides of the head with scarcely any trace of chestnut shade............................ 136. *P. brachypterus.*

F. YELLOW GROUP.

a. Much larger: wings more than 3 inches.

a^1. With a strong chestnut shade on portion of the head and neck.

a^2. Entire front half of the head and the throat shaded with chestnut .... 137 *P. capensis.*

b^2. Upper half of the head and sides of the neck shaded with chestnut. Chin and upper throat bright yellow.......... 138. *P. princeps.*

c^2. Crown, nape, and sides of the neck bright yellow. Entire throat and cheeks strongly shaded with chestnut. 139. *P. xanthopterus.*

b^1. With no strong chestnut shade on the plumage.

d^2. General plumage slightly more olive. Inner webs of the quills narrowly edged with buff. The tail-feathers darker, and with no pale edges ...... 140. *P. xanthops.*

e^2. General plumage slightly yellower. The inner webs of the quills and tail-feathers broadly edged with bright yellow .... 141. *P. subaureus.*

b. Much smaller: wings less than 3 inches.

c^1. Upper back uniform. No chestnut on the forehead.

f^2. Upper back olive. Wings dark brown, with strongly contrasting yellow edges to the feathers. Head and underparts deep yellow. Throat shaded with chestnut .... 142. *P. aurantius.*

g^2. Back, wings, and tail when closed nearly uniform yellow.

g^3. Head and throat duller yellow, with a slight chestnut tinge .... 143. *P. aureoflavus.*

h^3. Head and throat of a bright orange shade .... 144. *P. bojeri.*

d^1. Upper back olive, streaked with dark centres to the feathers. Forehead and cheeks chestnut .... 145. *P. galbula.*

G. Black-headed Yellow Group.

a. Bill very stout. Sides of the head and upper half of the throat black in both sexes. The male has the crown yellow; the female has it black, shading into olive on the nape, and bounded on each side by a broad yellow eyebrow. This eyebrow, in the birds out of plumage, is brownish buff and always strongly marked .... 146. *P. superciliosus.*

b. Bill weaker and variable in strength. Females with no black on the plumage.

b^1. With no black on the centre of the forehead.

b^2. Crown strongly shaded with chestnut.

b^3. Black of the throat not extending further down than in a line with the back of the ear-coverts. Ear-coverts black .... 147. *P. vitellinus.*

c^3. Black of the throat extending to the crop. Ear-coverts chestnut and yellow .... 148. *P. tæniopterus.*

c^2. Crown not shaded with chestnut.

d^3. Upper back strongly mottled with jet-black, owing to the feathers being of that colour with broad yellow ends. Wing 3·5 inches .... 149. *P. spilonotus.*

e^3. Upper back mottled with brownish black, owing to the centres of the feathers being of that colour with their sides yellow, thus giving a somewhat streaked appearance. The dark colour shows mostly towards the base of the neck, thus forming a partial ill-defined collar. Wing 3·3 inches .... 150. *P. spekii.*

f^{3}. Upper back uniform yellowish olive. Wing 2·7 inches .... 151. *P. heuglini.*

c^{1}. With an entirely black forehead. Black of the throat extending to the crop. Entire sides of the head black.

d^{2}. With no portion of the back black.

g^{3}. Black of forehead narrow, not extending over the entire front half of the crown. Bill stout .... 152. *P. velatus.*

g^{4}. Slightly smaller: wing 2·9 to 3·1 inches. Yellow of crown slightly more shaded with chestnut next to the black forehead.

g^{5}. Brighter. Back yellower. Edges of the wing-feathers bright yellow .... 1st var.

h^{5}. Duller. Back more olive. Edges of the wing-feathers pale buff. . 2nd var.

h^{4}. Slightly larger: wing 3·3 to 3·4 inches. Yellow of crown slightly more uniform .... 3rd var.

h^{3}. Black of forehead extending over the front half of the crown. Nape not black.

i^{4}. Upper back olive. Chest yellow.

i^{5}. Small: wing less than 2·5 inches. Bill comparatively long and slender.

i^{6}. Back of the head uniform deeper yellow. Back and rump uniform olive. Wing-feathers more narrowly edged with olive .... 153. *P. personatus.*

j^{6}. Back of the head paler and shaded with olive towards the neck. Back slightly paler and yellower, and inclining to bright yellow on the rump. Wing-feathers broadly edged with buffish yellow .... 154. *P. luteolus.*

j^5. Larger: wing more than 2·5 inches.

k^6. Slightly smaller. Under surface of the wings not so yellow; under wing-coverts and inner margins of the quills buff. Above, edges of the wing-feathers not so broad and not such bright yellow. Bill slightly longer and more slender.

k^7. Bill slightly more slender. Back and the wings when closed nearly uniform olive 155. *P. subpersonatus.*

l^7. Bill slightly stouter. Margins of the wing-feathers more buff or yellower than the back .... 156. *P. intermedius.*

l^6. Slightly larger: wing 3 inches. Under surface of the wings yellower; under wing-coverts and broad inner margins to the quills bright lemon-yellow. Wing-feathers broadly edged with yellow. Bill slightly stouter and shorter .... 157. *P. melanocephalus.*

k^4. Upper back yellow like the nape. Chest chestnut................ 158. *P. dimidiatus.*

l^4. Entire back yellowish chestnut. Wing-coverts broadly edged with that colour. Chest chestnut.... 159. *P. badius.*

i^3. Entire head including the nape black.

m^4. Smaller: wing less than 3 inches. Back yellow, slightly tinted with olive. Wing-feathers broadly edged with bright yellow. Underparts deep yellow, shaded with chestnut towards the black of the throat .... 160. *P. capitalis.*

n^4. Larger: wing about 4 inches. Back olive-yellow, with obscure dusky centres to the feathers. Beneath yellow, shading into a chestnut collar next to the black. 161. *P. grandis.*

e^2. Back yellow and jet-black.

k^3. Upper back evenly mottled, owing to all the feathers being black with broad yellow ends.

o^4. Black of the head and throat surrounded by chestnut, which extends over a portion of the chest . 162. *P. cinctus.*

p^4. Black of the head and throat surrounded by yellow .... 163. *P. nigriceps.*

l^3. Upper back with a central angular yellow patch, some of the feathers being entirely yellow, and with a broad black band down the scapulars, some of the feathers being entirely black.

q^4. With the black of the head entirely surrounded by a band of deep chestnut .... 164. *P. cucullatus.*

r^4. With the black of the head not surrounded by chestnut. Nape yellowish chestnut .... 165. *P. abyssinicus.*

H. DARK-COLOURED GROUP.

a. Wings and tail brown, with pale edges to the feathers. Head and neck black, entire body chestnut .... 166. *P. rubiginosus.*

b. Wings and tail uniform black.

b^1. Back, abdomen, and under tail-coverts chestnut. Head, neck, and chest black . 167. *P. castaneofuscus.*

c^1. Lower back black.

c^2. Portion of the plumage chestnut.

c^3. With a large yellow patch on the upper back. Breast bright chestnut. Head, neck, thighs, and under tail-coverts black .... 168. *P. tricolor,* ♂ ad.

d^4. Head, neck, part of upper back, and the breast yellowish chestnut, shading into dusky brown on the flanks, abdomen, and under tail-coverts .... *P. tricolor,* ♀ vel juv.

d^2. Entire plumage black .... 169. *P. nigerrimus.*

115. PLOCEUS NELICOURVI.

Parvus nelicourvi, Scop. Flor. et Faun. Insub. 1786, p. 96.
Loxia pensilis, Gm. S. N. i. 1788, p. 860.

Ploceus pensilis, Vieill. N. D. xxxiv. 1819, p. 128; Milne-Edw. & Grandid. Hist. Madag. Ois., Atlas, ii. pls. 179, 180.

Ploceus nelicourvi, Gray & Mitchell, Gen. B. ii. 1849, p. 352.

Nelicurvius pensilis, Bp. Consp. i. 1850, p. 439.

Hyphantornis pensilis, Hartl. Vög. Madag. 1877, p. 210.

Nelicurvius nelicourvi, Bartlett, P. Z. S. 1879, p. 771.

Hab. E. and N.W. Madagascar.

"*Parvus,*" Scop., being an adjective, cannot be employed for a genus and, besides, it was no doubt an error for *Parus.*

116. Ploceus sakalava.

Ploceus sakalava, Hartl. Faun. Madag. 1861, p. 54; Milne-Edw. & Grandid. Hist. Madag. Ois., Atlas, ii. pls. 177*a*, 178; Reichen. Zool. Jahrb. Jena, i. 1886, pl. 5. fig. 2.

Hab. W. Madagascar.

117. Ploceus eminentissimus.

Foudia eminentissima, Bp. Consp. i. 1850, p. 446, E. Afr. (type exam.); J. Verr. Nouv. Arch. du Mus. iii. 1867, p. 7, pl. 2. fig. 2, Zanzibar.

Ploceus algondæ, Poll. P. Z. S. 1866, p. 423, Mayotte; Poll. & Schl. Faun. Madag. pl. 34.

Calyphantria comorensis, Cab. V. d. Decken's Reisen, iii. 1869, p. 31, pl. 10, Mayotte.

Calyphantria eminentissima, Cab. l. c.

Foudia algondæ, Hartl. Vög. Madag. 1877, p. 216.

Foudia comorensis, Hartl. t. c. p. 217.

Hab. E. Africa and Comoro Islands. Zanzibar Island, Zambesi, and the islands of Mayotte, Anjuan, and Great Comoro.

I examined in the Paris Museum some specimens of this species, collected by M. Humblot in Great Comoro, with a new MS. name on the labels, which I trust may never be published.

118. Ploceus madagascariensis.

Bruant de l'Isle de Bourbon, Daub. Pl. Enl. 321.

Loxia madagascariensis, Linn. S. N. i. 1766, p. 300.

Fringilla bruante, P. L. S. Müll. Naturs. Suppl. p. 164.

Emberiza fuscofulva, Bodd. Table d. Pl. Enl. 1783, p. 20.

? *Emberiza borbonica*, Gm. S. N. i. 1788, p. 886, ex Buff.

Foudi, Vieill. Ois. Chant. 1805, p. 96, pl. 63.

Fringilla madagascariensis, Vieill. N. D. xii. 1817, p. 235.

Euplectes ruber, Swains. (nec Gm.), An. in Menag. 1838. p. 309.

Ploceus madagascariensis, Hartl. Ann. & Mag. Hist. Nat. ser. 2, ii. 1848, p. 389; Milne-Edw. & Grandid. Hist. Madag. Ois., Atlas, ii. pls. 181, 182.

Foudia madagascariensis, Bp. Consp. i. 1850, p. 445.

? *Foudia borbonica*, Reichb. Singvög. 1861, p. 69, pl. 31. fig. 248.

Calyphantria madagascariensis, Cab. V. d. Decken's Reisen. iii. 1869, p. 31.

Hab. Madagascar, and as an introduced bird in Mauritius, Réunion, Seychelles, and Mohilla.

In the Paris Museum there is a specimen of *P. madagascariensis* from Réunion, which is orange-yellow instead of red. This abnormal colouring is due, I have no doubt, to its having been caged.

119. PLOCEUS RUBER.

Moineau de l'Isle de France, Daub. Pl. Enl. 665.

Red-headed Finch, Brown, Ill. 1776, pl. 28. fig. 2.

Emberiza rubra, Gm. S. N. i. 1788, p. 877, ex Buff.

Fringilla erythrocephala, Gm. t. c. p. 903, ex Brown.

Fringille cardinaline, Vieill. Ois. Chant. 1805, p. 52, pl. 28.

Ploceus erythrocephalus, Swains. An. in Menag. 1838, p. 308.

Foudia erythrocephala, Bp. Consp. i. 1850, p. 445.

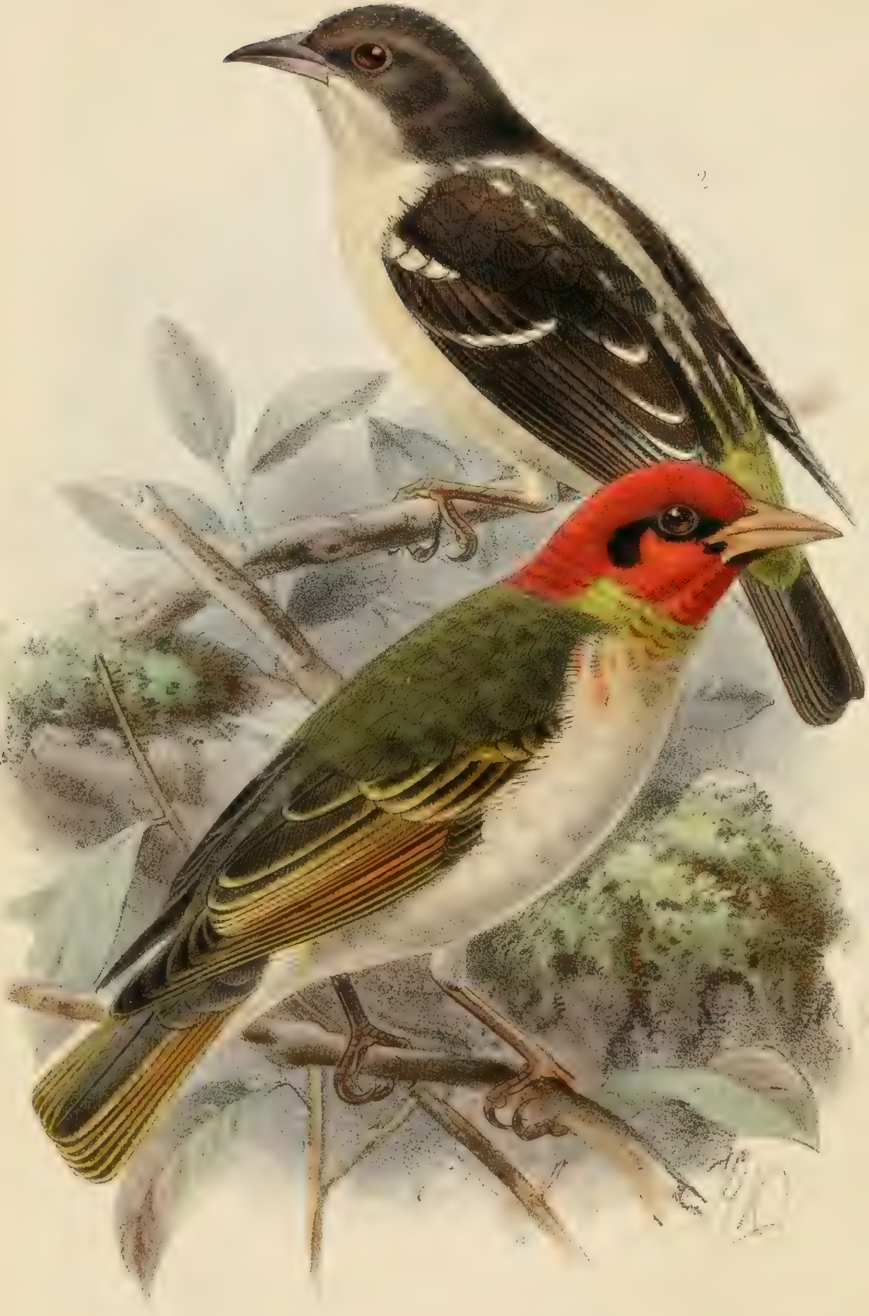
Foudia martineti, "Gray," Müll. J. f. O. 1856, p. 114.

Foudia rubra, Reichb. Singvög. 1861, p. 68, pl. 31. figs. 244, 245.

Hab. Mauritius.

a, ad. Mauritius (*Paris Mus.*). *b*, ♀. Mauritius (*Bewsher, Shelley Mus.*).

Ibis. 1887. Pl. I.



J. G. Keulemans del. Hanhart imp.

1. PLOCEUS GURNEYI.
2. PLOCEUS ANGOLENSIS.

120. Ploceus flavicans.

Foudia flavicans, E. Newton, P. Z. S. 1865, p. 47, pl. 1. figs. 1, 2, Rodriguez Island.

Ploceus flavicans, Schl. P. Z. S. 1866, p. 424.

Hab. Island of Rodriguez.

121. Ploceus seychellensis.

Foudia seychellarum, E. Newton, Ibis, 1865, p. 353, note, Marianne Island.

Hab. Seychelles.

122. Ploceus rubriceps.

Ploceus (*Hyphantornis*) *rubriceps,* Sundev. Œfv. K. Vet.-Ak. Förh. Stockh. 1850, p. 97, Limpopo.

Sycobius rubriceps, Bp. Consp. i. 1850, p. 438.

Anaplectes rubriceps, Reichb. Singvög. 1861, p. 87.

Malimbus rubriceps, Elliot, Ibis, 1876, p. 466, pl. 13. fig. 2, ♂.

Sharpia ayresi, Shelley, Ibis, 1882, p. 353, pl. 7. fig. 2.

Hab. S. Africa: Matabele and Transvaal.

The type of my *Sharpia ayresi* agrees perfectly with two other specimens I have examined in the British and Berlin Museums, supposed to be females of *P. ruficeps,* and I have been led to consider that my type was either not in full plumage or a female, although it was sexed as a male by Mr. T. Ayres, who is generally most accurate, and both he and Mr. J. S. Jameson, who were present when it was shot out of a colony then breeding, assured me they never saw a red-headed specimen.

123. Ploceus gurneyi. (Plate I. fig. 1.)

Sycobius rubriceps, Bocage (nec Sundev.), Jorn. Lisboa, 1877, p. 275.

Hab. Benguela.

This species is very similar to *P. rubriceps,* from which it differs in having the ear-coverts black, slightly washed with red. The chin, space in front of the eyes, and the front and upper portion of the cheeks black. Length 6·1 inches, culmen 0·6, wing 3·3, tail 2·3, tarsus 0·8.

The type specimen, labelled Caconda (Anchieta), was presented to me by Prof. Barboza du Bocage, and a full account of this species will be found in his 'Orn. Angola,' p. 334. The specimen described is not quite in full plumage, the upper back and crop being only mottled with yellow and red.

I have much pleasure in naming this South-African species after Mr. J. H. Gurney, in acknowledgment of the able work he has done for the ornithology of those regions.

124. PLOCEUS MELANOTIS.

Ploceus melanotis, Lafr. Rev. Zool. 1839, p. 20, Senegal; id. Mag. Zool. 1839, pl. 7.

Ploceus erythrocephalus, Rüpp. Syst. Uebers. 1845, pp. 71, 76, Shoa.

Sycobius melanotis, Bp. Consp. i. 1850, p. 438.

Ploceus leuconotus, Müll. Naum. iv. 1851, p. 28, Abyssinia.

Euplectes pyrrhocephalus, Heugl. Syst. Uebers. 1856, p. 39. no. 384.

Ploceus hæmatocephalus, Württ. Naum. 1857, p. 433, Fazogl.

Anaplectes melanotis, Reichb. Singvög. 1861, p. 86, pl. 44. fig. 323.

Malimbus melanotis, Sharpe, Cat. Afr. B. 1871, p. 60.

Calaphantria melanotis, Fisch. Zeitsch. ges. Orn. 1884, p. 332.

Calyphantria erythrogenys, Fisch. & Reichen. J. f. O. 1884, p. 181, Maurui, Pare.

Hab. N.E., E., and W. Africa. In East Africa between about 14° N. lat. and 4° S. lat. and Senegambia and Casamanse on the West Coast.

a, ♂. March, Lado; *b*, ♂. October, Shoa.

125. PLOCEUS ANGOLENSIS. (Plate I. fig. 2.)

Sharpia angolensis, Bocage, Jorn. Lisb. 1878, p. 258; id. Orn. Angola, 1881, p. 558.

Hab. S. Africa: Benguela.

126. PLOCEUS KERSTENI.

Sycobrotus kersteni, F. & H. Vög. Ostafr. 1870, p. 404.

Symplectes kersteni, F. & H. t. c. pl. 6.

Hab. E. Africa: between about 2° N. lat. and 7° S. lat.; from Wito to Ugogo.

127. Ploceus stictifrons.

Sycobrotus bicolor, F. & H. (nec Vieill.), Vög. Ostafr. 1870, p. 403, Zambesi (Livingstone).

Symplectes stictifrons, Fisch. & Reich. J. f. O. 1885, p. 373, Lindi (type exam.).

Hab. E. Africa; from the Rovuma to the Zambesi.

The type in the Berlin Museum agrees perfectly with a specimen in my own collection procured by Mr. Joseph Thomson near the Rovuma river, which bird has the wing 3·5 inches long. In the British Museum there are three specimens collected in the Shiré valley by the Livingstone Expedition; these measure in the wings 3·1, 3·1, 3·25 inches; they are small and rather pale in the colouring beneath, and although otherwise similar to the type in plumage, they show, I consider, signs of immaturity in the structure of some of the feathers, and in the colouring of their bills at the gape. They may ultimately prove to be a small pale-breasted subspecies.

128. Ploceus bicolor.

? *Pyranga icteromelas,* Vieill. N. D. xxviii. 1818, p. 291, America!

Ploceus bicolor, Vieill. N. D. xxxiv. 1819, p. 127, Senegal.

Fringilla gregalis, Licht. Verz. Doubl. 1823, p. 23, Kaffraria.

Ploceus chrysogaster, Vigors, P. Z. S. 1830, p. 92, inland from Algoa Bay.

Symplectes chrysomus, Swains. B. W. Afr. i. 1837, p. 170, S. Africa.

Euphodes xanthosomus, Jard. & Selby, Ill. Orn. 1837, pl. 10, S. Afr.

Hyphantornis chrysogastra, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Sycobius gregalis, Gray & Mitchell, t. c. p. 352.

Sycobius bicolor, Gray & Mitchell, l. c.

Symplectes bicolor, Bp. Consp. i. 1850, p. 439.

Sycobrotus bicolor, Cab. Mus. Hein. i. 1851, p. 182.

Hyphantornis bicolor, Finsch, J. f. O. 1867, p. 247.

Symplectes chrysogaster, Reichen. J. f. O. 1885, p. 373.

Hab. S. and W. Africa. In S. Africa it is only known from the Transvaal, Natal, and the eastern portion of Cape Colony, but in W. Africa it has been recorded from Angola, Abhor on the Niger, Sierra Leone, Casamanse, and Senegambia.

a, ♂. W. Afr. (*Maidstone Mus.*). *b.* Cape of Good Hope (type of *Euphodes xanthosomus*).

In the Paris Museum I was shown what was said to be the type of *Ploceus bicolor.* All the specimens I have seen agree perfectly with Natal birds, so that I cannot agree with Dr. Reichenow (J. f. O. 1885, p. 373) in considering the S.-African bird distinct from *Ploceus bicolor,* and that the plumage described as *Sycobrotus amaurocephalus,* Cab., is the typical W.-African form.

With regard to the synonymy, all the names except those given by Vieillot, and *S. amaurocephalus,* Cab., have been bestowed on S.-African skins.

129. PLOCEUS AMAUROCEPHALUS.

Sycobrotus amaurocephalus, Cab. J. f. O. 1880, p. 349, pl. 31. fig. 1, Angola.

Symplectes amaurocephalus, Bocage, Orn. Angola, 1881, p. 558.

Hab. W. Africa, Angola.

I have not seen the type, so have kept it separate from *P. bicolor*; but from the figure and description, and the fact of there only being one specimen recognized, I much doubt its specific distinctness from *P. bicolor.*

130. PLOCEUS BAGLAFECT.

Ploceus baglafect, Vieill. N. D. xxxiv. 1819, p. 127.

Ploceus melanotis, Guér. (nec Lafr.), Rev. Zool. 1843, p. 321; Müll. Descr. Nouv. Ois. d'Afr. part iv. 1854, pl. 2, head.

Ploceus auricularis, Flor. Prévost in Lefèbvre's Voy. Abyss. 1845, Atlas, pl. 2. fig. 1 (type exam., *Paris Mus.*).

Hyphantornis guerini, Gray, Gen. B. ii. 1849, p. 351; Heugl. Orn. N.O.-Afr. pl. 11. fig. 3, head.

Textor melanotis, Bp. Consp. i. 1850, p. 442.

Ploceus melanogenys, Müll. Naum. 1851, p. 28, Abyssinia.

Ploceus aurantius, Heugl. (nec Vieill.) Syst. Uebers. 1856, p. 38. no. 360.

Ploceus leucophthalmus, Heugl. l. c. no. 378.

Ploceolus melanotis, Reichb. Singvög. 1861, p. 78, pl. 37. fig. 286.

Hyphantornis melanotis, Blanf. Geol. & Zool. Abyss. 1870, p. 403.

Hyphantornis temporalis, Bocage, Jorn. Lisb. 1880, p. 244, Caconda.

Symplectes baglafecht, Reichen. J. f. O. 1885, p. 373.

Hab. N.E. and S. Africa: Bogos, Abyssinia, Shoa, and Caconda in Benguela.

a, ♂; *b,* ♀. May, Senafé (*Blanford, Brit. Mus.*). *c,* ♂. January, Shoa.

In the characters given for *Hyphantornis temporalis,* Bocage, I see none to separate it from the present species.

131. Ploceus emini.

Sycobrotus emini, Hartl. Orn. Centralbl. 1882, p. 92; id. J. f. O. 1882, pl. 1. fig. 1, ♂, 2, ♀, Agaru (*Emin Bey*).

Hyphantornis emini, Hartl. J. f. O. 1882, p. 322.

Symplectes emini, Reichen. J. f. O. 1885, p. 373.

Hab. N.E. Africa: Upper White Nile, about 5° N. lat.

a, ♀. April; *b,* ♂, *c,* ♂, May, Agaru (*Emin Bey*).

132. Ploceus reichenowi.

Sycobrotus reichenowi, Fisch. J. f. O. 1884, p. 180, Lake Naiwascha.

Hyphanturgus reichenowi, Fisch. Zeitsch. ges. Orn. (Madarász), 1884, p. 330.

Symplectes reichenowi, Reichen. J. f. O. 1885, p. 373.

Hab. E. Africa, south of the equator to about 4° S. lat.

Mr. H. H. Johnston found it abundant in the Kilimanjaro Mountains.

133. PLOCEUS NIGRICOLLIS.

Malimbus nigricollis, Vieill. Ois. Chant. 1805, p. 74, pl. 45, ♂, Congo.

Ploceus flavicapillus, Vieill. N. D. xxxiv. 1819, p. 128, ♂, Congo.

Ploceus nigricollis, Vieill. t. c. p. 129.

Ploceus jonquillaceus, Vieill. t. c. p. 130, ♀.

Ploceus atrogularis, Voigt, Cuv. Thierr. i. 1831, p. 564.

Ploceus atricapilla, "Vieill.," Less. Compl. Buff. viii. 1837, p. 307 (err. pro *flavicapilla*).

Sycobius St. Thomæ, Hartl. Rev. Zool. 1848, p. 109; id. Abhandl. nat. Ver. Hamb. 1848, pl. 9 (very bad).

Symplectes nigricollis, Bp. Consp. i. 1850, p. 439.

Hyphantornis grayi, J. & E. Verr. Rev. et Mag. Zool. 1851, p. 514.

Symplectes chrysophrys, J. & E. Verr. t. c. 1855, p. 106, Gaboon.

Estrelda jonquillacea, Müll. J. f. O. 1856, p. 116.

Ploceus tricolor, Temm. MS. 1854, fide Hartl. (nec Hartl. 1854) Orn. W.-Afr. 1857, p. 135.

Hyphantornis flavigula, Cass. Pr. Ac. Philad. 1859, p. 134, Gaboon.

Hyphantornis nigricollis, Reichb. Singvög. 1861, p. 87, pl. 44. fig. 325.

Hyphantornis jonquillaceus, Reichb. l. c.

Hyphantornis amauronotus, Reichen. J. f. O. 1877, p. 27, Loango.

Hab. W. Africa, from the Congo river to Senegambia.

134. PLOCEUS MELANOXANTHUS.

Sycobrotus nigricollis, F. & H. (nec Vieill.) Vög. Ostafr. 1870, p. 405 (part E. Afr.).

Hyphanturgus melanoxanthus, Cab. J. f. O. 1878, pp. 205, 232, ♀, Mombas.

Hyphanturgus nigricollis, Cab. J. f. O. 1878, p. 232, ♂.

Sycobrotus melanoxanthus, Shelley, P. Z. S. 1881, p. 585.

Hab. E. Africa: Zanzibar Province, between about 1° and 10° S. lat.

135. Ploceus ocularius.

Ploceus ocularius, Smith, Proc. S. Afr. Instit. 1828, fide Smith, Ill. Zool. S. Afr. 1839, pl. 30. fig. 2, ♂.

Ploceus gutturalis, Vigors, P. Z. S. 1831, p. 92, inland from Delagoa Bay.

Hyphantornis gutturalis, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis ocularia, Gray & Mitchell, l. c.

Hyphanturgus ocularius, Cab. Mus. Hein. i. 1850, p. 182.

Ploceus ocularis, Gurney (err.), Ibis, 1862, p. 37.

Hyphantornis ocularis, Ayres, Ibis, 1867, p. 431.

? *Hyphantornis crocata,* Hartl. Abhandl. nat. Ver. Brem. vii. 1881, p. 100, Magungo (*Emin Bey*).

? *Icteropsis crocata,* Pelz. Verh. zool.-bot. Ges. Wien, 1881, p. 149.

Hab. E., S., and W. Africa: the whole of E. and S. Africa south of about 5° N. lat., and Landana in W. Africa.

a, ♂. May, Agaru (*Emin Bey*); this would be, I suppose, a typical *H. crocata,* Hartl. *b,* ♂. Mombas; *c,* ♂. Zambesi (*Brit. Mus.*); *d,* ♀. February, Landana (*Petit, Shelley Mus.*).

Dr. Hartlaub informs me by letter that his *Hyphantornis crocata* is totally distinct from the *Icteropsis crocata,* Pelz., for which latter species he has therefore suggested the name of *Sitagra pelzelni.*

136. Ploceus brachypterus.

Ploceus brachypterus, Swains. B. W. Afr. i. 1837, p. 168, pl. 10, ♂.

Ploceus flavigula, Hartl. Rev. Zool. 1845, p. 406, ♀, Accra; Müll. Descr. Ois. d'Afr. 1854, pl. 20. fig. 1.

Hyphantornis brachyptera, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis flavigula, Gray & Mitchell, l. c.

Textor flavigula, Bp. Consp. i. 1850, p. 442.

Hab. W. Africa. From the Gaboon to Senegambia and Fernando Po.

This form is very closely allied to *P. ocularius,* but the characters, though slight, appear to be constant. It has been recorded from Landana (Bull. Soc. Zool. France, 1867, p. 309), but I think this may be a mistake, as I have *P. ocularius*, ♀, from that locality.

137. Ploceus capensis.

Oriolus capensis, Gm. S. N. i. 1788, p. 392.

Icterus olivaceus, Hahn, Vög. As. &c. Lief. vi. 1822, pl. 4.

Icterus caffer, Licht. Verz. Doubl. 1823, p. 19, Kaffraria.

Ploceus aurifrons, Temm. Pl. Col. 1823, pls. 175, ♂, 176 ♀.

Ploceus abyssinicus, Less. (nec Gm.) Traité d'Orn. 1831, p. 434, Cape.

Ploceus icterocephalus, Swains. Class. B. i. 1837, p. 189.

Ploceus aureus, Des Murs in Lefèbvre's Voy. Abyss. 1845, p. 108.

Hyphantornis aurifrons, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis capensis, Gray & Mitchell, *l. c.*

Oriolinus capensis, Reichb. Singvög. 1861, p. 84, pl. 42. figs. 315, 316.

Oriolinus aurifrons, Reichb. t. c. pl. 43. figs. 317, 318.

Hyphantornis olivaceus, Gurney, Ibis, 1868, p. 161.

Hab. S. Africa: from the Zambesi to Natal and the eastern portion of Cape Colony.

This species has been recorded from N.E. Africa by Des Murs, Heuglin, and Hartlaub, and from Senegambia by Temminck and Rochebrune, but I feel confident that it is not a native of any of these localities. Probably these errors have arisen from the females of other species having been mistaken for the present one, and have been multiplied by copying.

138. Ploceus princeps.

Symplectes princeps, Bp. Consp. i. 1850, p. 439, Prince's Island.

Hyphantornis princeps, Reichb. Singvög, 1861, p. 87.

Hab. W. Africa: Prince's Island.

139. PLOCEUS XANTHOPTERUS.

Hyphantornis, sp., Kirk, Ibis, 1864, p. 322, Shiré.

Hyphantornis xanthopterus, F. & H. Vög. Ostafr. 1870, p. 399 (type exam.).

Hyphantornis castaneigula, Cab. J. f. O. 1884, p. 240, pl. 3. fig. 1, Zambesi (type exam.).

Ploceus castaneigula, Reichen. Zool. Jahrb. Jena, i. 1886, p. 118.

Hab. S.E. Africa: Shiré and Zambesi.

a, type. Dcember, Lower Shiré (*Kirk*, *Brit. Mus.*).

140. PLOCEUS XANTHOPS.

Hyphantornis xanthops, Hartl. Ibis, 1862, p. 342, Angola (type exam. *Brit. Mus.*).

Hyphantornis aurantiigula, Cab. J. f. O. 1875, p. 238, Loango.

Ploceus xanthops, Reichen. Zool. Jahrb. Jena, i. 1886, p. 123, pl. 5. fig. 1.

Hab. E., S., and W. Africa. In E. Africa, Kitui in Ukambani, Gonda, and Ugalla; in S. Africa, Matabele and Benguela; in W. Africa from Angola to the Loango coast.

141. PLOCEUS SUBAUREUS.

Ploceus subaureus, Smith, Pr. S. Afr. Instit. 1832, April, fide Smith, Ill. Zool. S. Afr. 1839, pl. 30. fig. 1, Algoa Bay.

Ploceus tahatali, Smith, Rep. Exped. Expl. Centr. Afr. 1836, p. 50.

Hyphantornis subaurea, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Oriolinus subaureus, Reichb. Singvög, 1861, p. 84, pl. 42. fig. 314.

Hab. S. Africa: Swaziland, Transvaal, Natal, and the eastern portion of Cape Colony.

A specimen in the British Museum, labelled *H. tahatali*, is an immature bird of this species.

142. PLOCEUS AURANTIUS.

Malimbus aurantius, Vieill. Ois. Chant. 1805, p. 73, pl. 44, Congo (type exam. *Paris Mus.*).

Ploceus aurantius, Vieill. N. D. xxxiv. 1819, p. 130.

Hyphantornis aurantia, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis royrei, J. Verr. J. f. O. 1865, p. 97.

Hab. E. and W. Africa: Mozambique (Oustalet), and from the Congo to the Niger.

a. November, Bonny (*Crossley, Brit. Mus.*); *b,* ♂. October, Landana.

143. PLOCEUS AUREOFLAVUS.

Ploceus aureoflavus, Smith, Ill. Zool. S. Afr. 1839, text to pl. 30. fig. 1, W. Afr.

Hyphantornis aureoflava, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Textor aureoflavus, Bp. Consp. i. 1850, p. 441.

Hyphornis aurea, Natt., Hartl. J. f. O. 1860, p. 180.

Ploceus aurantius, Vieill. var., Bianc. Spec. Zool. Mosamb. fasc. xviii. 1865, p. 322, Mozambique.

Hyphantornis subaureus, Hartl. (nec Smith), P. Z. S. 1867, p. 826, Zanzibar.

Hyphantornis concolor, Heugl. J. f. O. 1867, p. 389.

Hab. E. Africa. Zanzibar Province from Mombas to Zanzibar, Simbaveni (*Böhm*), and possibly Mozambique.

I doubt the accuracy of the following localities:—Nubia (*Rüpp. Leyden Mus.*), Sierra Leone (*Smith*), and, in the British Museum, "Senegal (*Dr. Smith*)."

144. PLOCEUS BOJERI.

Xanthophilus aureoflavus, Reichb. (nec Smith) Singvög. 1861, p. 84, pl. 42. fig. 312.

Hyphantornis bojeri, Hartl. & Finsch in Cab. v. d. Decken's Reisen, iii. 1869, p. 32.

Ploceus bojeri, Reichen. Zool. Jahrb. Jena, i. 1886, p. 120.

Hab. E. Africa: between about 1° N. lat. and 7° S. lat.; from Barava in South Somali to Zanzibar Island.

a, ♂. July, Mombas Island.

145. PLOCEUS GALBULA.

Ploceus galbula, Rüpp. Neue Wirb. 1835–40, p. 92, pl. 32. fig. 2.

? *Ploceus aureus,* Des Murs in Lefèbvre's Voy. Abyss. 1845, p. 108, Adowa.

Hyphantornis galbula, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Textor galbula, Bp. Consp. i. 1850, p. 441.

Hab. N.E. Africa, east of the Nile from Suakim to Somaliland, and resident at Aden.

146. PLOCEUS SUPERCILIOSUS.

Hyphantornis superciliosus, Shelley, Ibis, 1873, p. 140, Fantee, Accra.

Ploceus superciliosus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 155.

Hab. W. Africa, Loango, Niger, and Gold Coast.

a, ♂. November, Shonga on Niger. Crown yellow, sides of the head and upper throat black. *b,* ♀. Crown black, shading into dusky olive towards the nape; a broad yellow eyebrow joins the yellow of the neck. Sides of the head and upper throat black. Sides and lower half of the throat and the chest yellow. Abdomen, thighs, and under tail-coverts buff. Back olive-brown. These two specimens are in the British Museum, and are in the fullest plumage I have yet seen.

In the colouring of the crown in the sexes this species somewhat assimilates *P. emini* and *P. reichenowi,* but in its general structure it most nearly approaches *P. vitellinus.*

147. PLOCEUS VITELLINUS.

Fringilla vitellina, Licht. Verz. Doubl. 1823, p. 23, Senegambia.

Ploceus ruficeps, Swains. B. W. Afr. ii. 1837, p. 262, Gambia.

Hyphantornis vitellina, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Textor vitellina, Bp. Consp. i. 1850, p. 441 (syn. excl.).

Ploceus sublarvatus, Müll. Naum. 1851, p. 28, Sennaar, Nubia.

Textor sublarvatus, Müll. Descr. Ois. d'Afr. part iii. 1854, pl. 12, ♂ ♀.

Ploceus auranticeps, Heugl. Syst. Uebers. 1856, p. 38, no. 370.

Ploceolus sublarvatus, Reichb. Singvög. 1861, p. 77, pl. 36. figs. 279, 280.

Ploceolus vitellinus, Reichb. t. c. p. 78, pl. 37. figs. 284, 285.

? *Xanthophilus sulphureus,* Reichb. t. c. p. 84, pl. 42. fig. 313, ♀.

Textor galbula, Antin. (nec Rüpp.) Cat. p. 63 (part.).

Textor chrysopygus, Heugl. J. f. O. 1864, p. 246, ♂, Nubia.

Ploceus flavomarginalis, Pr. Württ. MS. fide Heugl. J. f. O. 1867, p. 299.

Ploceus vitellinus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 148.

Ploceus reichardi, Reichen. t. c. p. 150, Karema.

Hab. N.E., E., and W. Africa. South from Berber about 17° N. lat. to the Zambesi, and on the west coast from Accra to Senegambia.

P. reichardi, Reichen., is only known to me by the original description, which appears to me to agree perfectly with the present species.

148. PLOCEUS TÆNIOPTERUS.

Ploceus tæniopterus, Reichb. Singvög. 1861, p. 78, pl. 36. figs. 281, 282.

Ploceus intermedius, Heugl. (nec Rüpp.) Syst. Uebers. 1856, p. 38. no. 372, Shoa.

Hyphantornis atrogularis, F. & H. (nec Heugl.) Vög. Ostafr. 1870, pp. 394, 395.

Hyphantornis tænioptera, Heugl. Orn. N.O.-Afr. 1871, pp. 554, pl. 18. fig. 2, head, App. p. cxxx.

Ploceus tæniopterus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 151.

Hab. N.E. Africa: Upper White Nile, between about 10° and 5° N. lat.

a, ♂ juv. or in full moult, March. *b,* ♂ ad., May, Lado. *c,* ♂ ad., July, Bor (*Emin Bey*).

149. PLOCEUS SPILONOTUS.

Ploceus spilonotus, Vigors, P. Z. S. 1831 (June), p. 92, Inland from Algoa Bay.

Ploceus stictonotus, Smith, S. Afr. Quart. Journ. 1831 (October), p. 11, Keishanna River.

Ploceus flaviceps, Swains. B. W. Afr. ii. 1837, p. 259, pl. 32, Senegal.

Hyphantornis spilonota, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Ploceus chrysostictos, Licht, fide Bp. Consp. i. 1850, p. 441.

Ploceus cyclospilus, Reichb. Singvög. 1861, p. 80, pl. 38. figs. 295, 296.

? *Ploceus brandtii,* Reichb. t. c. p. 82, pl. 40. fig. 306.

Hab. E. and S. Africa: between Mosambique, Natal, and Lake Ngami.

M. Rochebrune records this species from seven localities in Senegambia, yet considers it to be rare there. Previously it was only recorded on Mr. Swainson's authority, from a skin possibly incorrectly labelled. I cannot, upon the present evidence, admit this species to be a native of Senegambia, but it may have been introduced.

I have followed Dr. Reichenow in referring *P. brantii,* Reichb., to this species, but it appears to me to be indeterminable.

150. PLOCEUS SPEKII.

Hyphantornis baglafecht, Blyth (nec Vieill.), Journ. As. Soc. Bengal, xxiv. 1856, p. 301, Somali.

Hyphantornis spekii, Heugl. in Peterm. Geogr. Mitth. 1861, p. 24.

Hyphantornis somalensis, Heugl. J. f. O. 1867, p. 379, Somali.

Hyphantornis somalicus, "Heugl.," Finsch, J. f. O. 1868, p. 169.

Hyphantornis meloxit, Antin. M.S. fide Salvad. Ann. Mus. Civ. Gen. 1884, p. 188, Galla.

Ploceus spekii, Reichen. Zool. Jahrb. Jena, i. 1886, p. 146.

Hab. N.E. Africa: Shoa, Galla, and Somali.

a, ♂. May, Shoa.

151. PLOCEUS HEUGLINI.

Textor atrogularis, Heugl. (nec Voigt), J. f. O. 1864, p. 245.

Hyphantornis atrogularis, Heugl. J. f. O. 1867, p. 387; id. Orn. N.O.-Afr. pl. 19.

Ploceus heuglini, Reichen. Zool. Jahrb. Jena, i. 1886, p. 147.

Hab. N.E. and W. Africa: from the Upper White Nile to the Niger and the Gambia.

In the British Museum there are specimens from Sassa, Lokoja on the Niger, and the Gambia.

152. PLOCEUS VELATUS.

Ploceus velatus, Vieill. N. D. xxxiv. 1819, p. 132, Namaqua.

Ploceus personatus, Swains. (nec Vieill.), An. in Menag. 1838, p. 306.

Ploceus auricapillus, Swains. t. c. p. 346, S. Afr.

Ploceus mariquensis, Smith, Ill. Zool. S. Afr. 1845, pl. 103.

Hyphantornis velata, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis mariquensis, Gray & Mitchell, l. c.; Gurney, Ibis, 1868, p. 466, pl. 10.

Tentor mariquensis, Bp. Consp. i. 1850, p. 441.

Hyphantornis nigrifrons, Cab. Mus. Hein. i. 1851, p. 182.

Ploceolus nigrifrons, Reichb. Singvög. 1861, p. 78, pl. 37. fig. 287.

Ploceus chloronotus, Reichb. t. c. p. 82, pl. 40. figs. 304, 305.

Hyphantornis capitalis, Layard (nec Lath.), B. S. Afr. 1867, p. 180.

Hyphantornis auricapillus, Layard, t. c. p. 183.

Hyphantornis æthiops, Heugl. J. f. O. 1867, p. 380, Abyssinia (*Leyden Mus.*).

Hyphantornis vitellinus, Ayres (nec Licht.), Ibis, 1880, p. 106, Transvaal.

Hyphantornis melanops, Cab. J. f. O. 1884, p. 240, pl. 3. fig. 2, Zambesi (type exam.).

Hab. The whole of S. Africa.

This species is apparently entirely confined to S. Africa, and the locality Abyssinia for the type of *Hyphantornis æthiops,* Heugl., is probably incorrect.

It appears to become gradually duller and more olive in colour as it approaches Natal. In Namaqua the specimens generally, if not always, belong to the bright form, my 1st var., to which I should refer *P. velatus,* Vieill., *P. auricapillus,* Swains., and *H. melanops,* Cab. My 2nd var., based upon the specimen figured Ibis, 1868, pl. x., is probably the *P. mariquensis,* Smith, which was founded upon a female bird; and my 3rd var. is the *H. nigrifrons,* Cab., *P. chloronotus,* Reichb., and the *H. æthiops,* Heugl.

153. PLOCEUS PERSONATUS.

Ploceus personatus, Vieill. Gal. Ois. i. 1825, p. 117, pl. 84.

Hyphantornis personata, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Ploceolus personatus, Reichb. Singvög. 1861, p. 77, pl. 35. figs. 274, 275.

Hab. W. Africa: from the Congo to the Gold Coast.

a, ♂; *b,* ♀. February. *c,* ♂; *d,* ♀. March, Gold Coast (*Shelley*).

154. PLOCEUS LUTEOLUS.

Fringilla luteola, Licht. Verz. Doubl. 1823, p. 23, note, Senegambia.

Ploceus melanotis, Swains. An. in Menag. 1838, p. 307.

Fringilla chrysomelas, Heugl. Syst. Uebers. 1846, p. 41. no. 418, Bogos.

Ploceus minutus, Müll. Naumann. 1851, p. 28, Nubia.

Fringilla mülleri, Baldam. l. c.

Sitagra luteola, Cab. Mus. Hein. i. 1851, p. 181.

Hyphantornis luteolus, Hartl. Orn. W.-Afr. 1857, p. 123 (part.), Senegal.

Ploceolus luteolus, Reichb. Singvög. 1861, p. 77, pl. 35. fig. 273.

Ploceus luteolus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 153.

Hab. N.E. and W. Africa. Between about 15° and 5° N.

lat. Bogos, Abyssinia, Shoa, White Nile to Lado in E. Africa. Senegambia and the Bulama Islands on the West Coast.

a, ♂. July, Anseba valley (*Blanford*). *b*, ♂. July, Lado (*Emin Bey*).

155. PLOCEUS SUBPERSONATUS.

Hyphantornis subpersonatus, Cab. J. f. O. 1876, p. 92, Loango Coast.

Ploceus subpersonatus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 152, pl. 5. fig. 4.

Hab. West Africa: Landana and Loango Coast.

156. PLOCEUS INTERMEDIUS.

Ploceus intermedius, Rüpp. Syst. Uebers. 1845, pp. 71, 76, Shoa (type exam.).

Hyphantornis intermedia, Gray & Mitchell, Gen. B. ii. 1849, p. 351; Heugl. Orn. N.O.-Afr. pl. 18. fig. 2 (head).

Ploceus erythrophthalmus, Heugl. Syst. Uebers. 1856, p. 38. no. 375, ♀?

Ploceolus capitalis, Reichb. (nec Lath.), Singvög. 1861, p. 77 part, pl. 35. fig 276.

Hyphantornis erythrothalma, Heugl. J. f. O. 1867, p. 386.

Hyphantornis cabanisi, Peters, J. f. O. 1868, p. 133, Inhambani (type exam.).

Hyphantornis capitalis, Sharpe (nec Lath.), Cat. Afr. B. 1871, p. 58, Natal.

Hyphantornis nigrifrons, Buckley (nec Cab.), Ibis, 1874, p. 380, Bamangwato.

Hab. N.E., E., and S. Africa. The whole East Coast of Africa from Shoa to Natal.

a, b. Lamu and Pangani. *c, d.* October, Tati and Bamangwato. *e*, ♂. December, Omaruru.

The chestnut shade on the yellow which surrounds the black head is strongest in specimens from the north, and fades out almost entirely in those procured to the south of the Zambesi.

This and *P. subpersonatus* are little more than subspecies, but the present bird may be easily recognized by having a rather stronger bill and very distinctly marked pale edges to the wing-feathers.

157. Ploceus melanocephalus.

Coccothraustes gambiensis, Briss. Orn. iii. 1760, p. 230, descr. good.

Loxia melanocephala, Gm. S. N. i. 1788, p. 859, ex Briss.

Coccothraustes melanocephala, Vieill. N. D. xiii. 1817, p. 523.

? *Fringilla capitalis,* Licht. (nec Latham), Verz. Doubl. 1823, p. 23, descr. defect., Senegal.

Ploceus cucullatus, Swains. (nec Müll.), B. W. Afr. ii. 1837, p. 261; Reichb. Singvög. 1861, p. 79, pl. 38. fig. 291, very bad.

Textor cucullatus, Bp. Consp. i. 1850, p. 441, ex Swains.

Hyphantornis capitalis, Hartl. Orn. W.-Afr. 1857, p. 148, ex Licht.

Hyphantornis cucullatus, Hartl. t. c. p. 125, ex Swains.

Ploceus capitalis, Reichen. Zool. Jahrb. Jena, i. 1886, p. 133.

Hab. W. Africa: Senegambia.

a, ♂. Gambia.

[Ploceus duboisi, Hartl. Bull. Mus. Roy. Hist. Nat. Belg. iv. 1886, p. 144, pl. 4. fig. 1.

I have not examined a specimen of this supposed new species, which was collected in the neighbourhood of Lake Tanganyika by M. Storms. The type is undoubtedly an adult male in full plumage of a species very closely allied to, if not identical with, *P. melanocephalus,* which is the same as the *P. capitalis,* Reichenow (nec Lath.).

The measurements given I cannot rely upon, as the two specimens referred to this species are said to differ in the lengths of their wings by 1·5 inch—an evident error.

As Dr. Reichenow is said to consider this to be a good new species, its characters must have been overlooked in the original description and figure.]

158. Ploceus dimidiatus.

? *Ploceus affinis,* Heugl. Sitz. math.-nat. Cl. Ak. Wien, xix. 1856, p. 37. no. 366 (♀?, type exam. Berlin Mus.).

Textor rubiginosus, Heugl. (nec Rüpp.), J. f. O. 1862, p. 27.

Hyphantornis dimidiata, Salvad. & Antin. Att. R. Acc. Tor. viii. 1873, p. 360; id. Ann. Mus. Civ. Gen. iv. 1873, p. 483, pl. 3.

Ploceus dimidiatus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 130, pl. 5. fig. 3.

Hab. N.E. and E. Africa: between about 16° N. lat. and 4° S. lat., from Kassala to Little Arucha.

It is, I consider, impossible to determine for certain to what species *P. affinis,* Heugl., really belongs, as it is in the dull female dress, but Dr. Reichenow is probably correct in referring it to the present one.

159. PLOCEUS BADIUS.

Hyphantornis badius, Cass. Pr. Ac. Philad. 1850, p. 57, Fasoglo.

Ploceus rufocitrinus, Müll. Naum. iv. 1851, p. 28.

Ploceus mordoreus, Licht. MS. fide Bp. Rev. et Mag. Zool. 1855, p. 76.

Ploceus badius, Reichb. Singvög. 1861, p. 83, pl. 41. figs. 309, 310.

Textor galbula, Antin. (nec Rüpp.), Cat. 1864, p. 62 (♀), fide Salvad. Att. R. Acc. Tor. 1870, p. 240.

Textor castaneo-auratus, Antin. Cat. p. 65.

Ploceus, sp.?, Heugl. J. f. O. 1865, p. 98.

Hyphantornis axillaris, Heugl. J. f. O. 1867, pp. 298, 381.

Hab. N.E. Africa: White Nile district.

160. PLOCEUS CAPITALIS. (Plate II. fig. 1.)

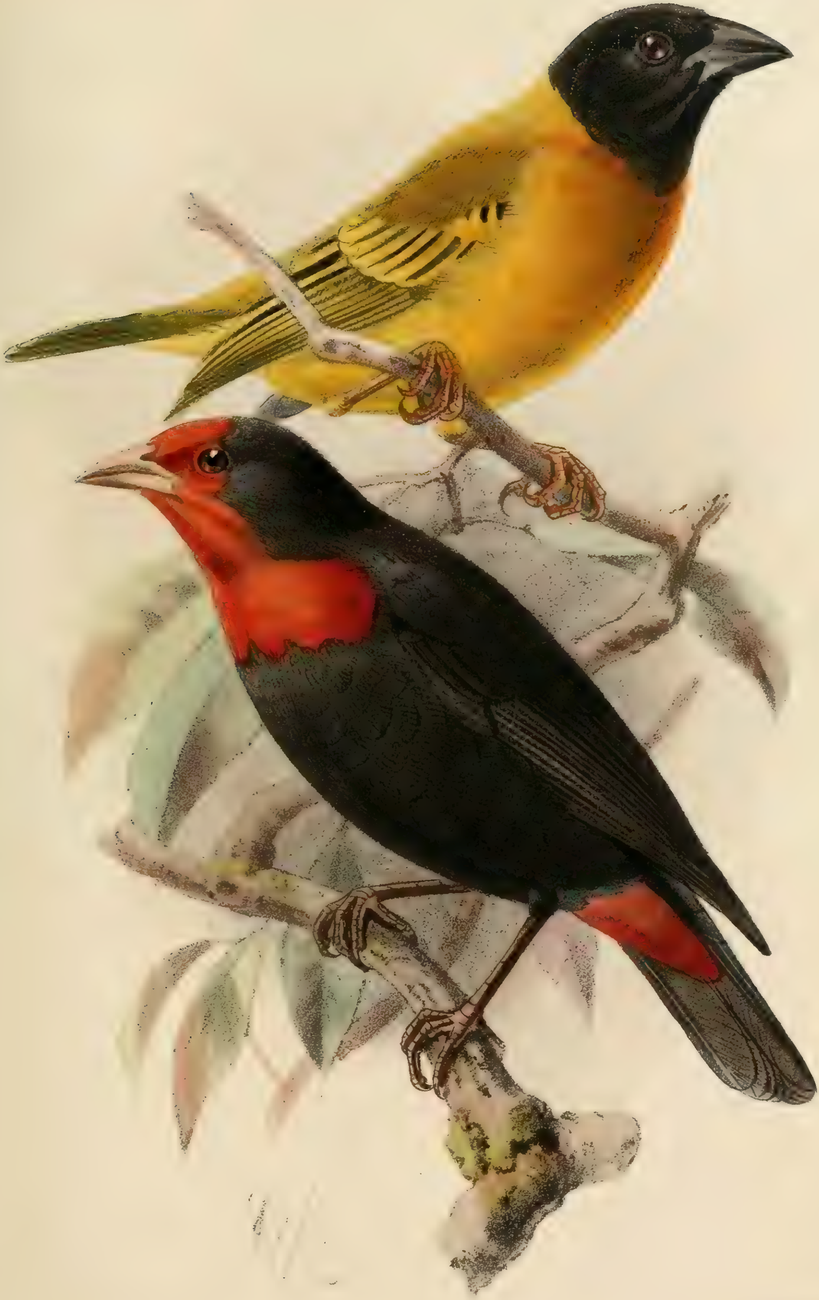
Capital Tanager, Lath. Syn. Suppl. i. 1787, p. 162, pl. 112, very bad.

Tanagra capitalis, Lath. Ind. Orn. i. 1790, p. 432.

Hyphantornis capitalis, Gray & Mitchell, Gen. B. ii. 1849, p. 351; Shelley, Ibis, 1883, p. 550, Abutschi and Shongo on Niger; Sharpe ed. Layard's B. S. Afr. 1884, p. 442.

Hab. S. and W. Africa: Niger river.

In the British Museum there is a specimen labelled "S. Africa," and another, *Hyphantornis prosoborinus,* with



J G Keulemans lith. Hanhart imp.

1. PLOCEUS CAPITALIS.
2. MALIMBUS RUBROPERSONATUS.

no locality. Although Latham's description is poor and his illustration shockingly bad, he describes his bird as having the entire head black, being five inches in length, and with the breast "of a fine yellow, inclining to orange." From its nearest allies it may be distinguished thus: *P. melanocephalus* has the breast pale yellow with no orange shade, nape yellow. *P. dimidiatus* and *P. badius* have the chest chestnut. All the other entirely black-headed species are larger.

161. PLOCEUS GRANDIS.

Ploceus collaris, Fraser (nec Vieill.), P. Z. S. 1842, p. 142, St. Thomas Is. (type exam. Brit. Mus.); id. Zool. Typ. pl. 45.

Hyphantornis grandis, Gray, Gen. B. ii. 1849, p. 351, ex *P. collaris*, Fraser.

Ploceus grandis, Reichb. Singvög. 1861, p. 83, pl. 51. fig. 307.

Hab. W. Africa: St. Thomas Is.

162. PLOCEUS CINCTUS.

? *Ploceus collaris*, Vieill. N. D. xxxiv. 1819, p. 129, Angola, Congo, Senegal.

? *Hyphantornis collaris*, Hartl. Orn. W.-Afr. 1857, p. 126, ex Vieill.

Hyphantornis cincta, Cass. Pr. Ac. Philad. 1859, p. 133, Camma R.; id. Journ. Ac. Philad. 1862, p. 184, pl. 23. fig. 2.

Ploceus cincta, Reichb. Singvög. 1861, p. 80.

Hab. S. and W. Africa: from Benguela to the Gold Coast.

In the British Museum there are three specimens from Fantee, but they are all immature.

163. PLOCEUS NIGRICEPS.

Hyphantornis larvatus, Sclat. (nec Rüpp.), P. Z. S. 1864, p. 110, Uzaromo.

Hyphantornis nigriceps, Layard, B. S. Afr. 1867, p. 180, Kuruman.

Hyphantornis cucullatus, Bocage (nec P. L. S. Müll.), Jorn. Lisb. 1867, p. 334, Capangombe.

Ploceus nigriceps, Reichen. Zool. Jahrb. Jena, i. 1886, p. 137.

Hab. E., S., and W. Africa. South from Barava on the Somali coast, 1° N. lat., to Natal, and from thence to Benguela and Malanje in Angola.

164. PLOCEUS CUCULLATUS.

Fringilla senegalensis, Briss. Orn. iii. 1760, p. 173, pl. 15. fig. 2.

Oriolus cucullatus, P. L. S. Müll. Natnrs. Suppl. 1776, p. 87, ex Briss.

Troupiale du Sénégal, Daub. Pl. Enl. pls. 84 ♂, 85 ♀.

Oriolus textor, Gm. S. N. i. 1788, p. 390, ex Buff.

Ploceus textor, Vieill. N. D. xxxiv. 1819, p. 128, Congo.

Fringilla longirostris, Vieill. Enc. Méth. 1823, p. 951, ex Briss.

Fringilla velata (part.), Licht. (nec Vieill.), Verz. Doubl. 1823, p. 23.

Ploceus senegalensis, Shaw, Gen. Zool. xiv. 1826, p. 34; Swains. Zool. Ill. n. s. pl. 37.

? *Coccothraustes olivaceus*, Fraser, P. Z. S. 1842, p. 144, ♀, Fernando Po.

? *Ploceus modestus*, Hartl. Rev. Zool. 1845, p. 406, ♀, Senegal, Abyssinia.

Hyphantornis textor, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Hyphantornis modesta, Gray & Mitchell, l. c.

Hyphantornis melanocephala, Bp. (nec Gm.), Consp. i. 1850, p. 440.

Hyphantornis magnirostris, Verr. in Hartl. Orn. W.-Afr. 1857, p. 127, ♀, Senegal.

Ploceus magnirostris, Reichb. Singvög. 1861, p. 82.

Ploceus solitarius, Württ. MS. fide Heugl. J. f. O. 1867, p. 297.

Coccothraustes gambiensis, F. & H. (nec Briss.), Vög. Ostafr. 1870, p. 389, note.

Hyphantornis gambiensis, Heugl. Orn. N.O.-Afr. pp. 552, cxxx.

Ploceus cucullatus, Reichen. Zool. Jahrb. Jena, i. 1856, p. 133.

Hab. N.E. and W. Africa. It ranges from Abyssinia to Senegambia, and down the West Coast to the Gaboon and the island of Fernando Po. It has been recorded from Angola, but its occurrence there is open to doubt.

Amongst the varieties may be seen specimens with the black on the back nearly absent, and the amount of the chestnut shade on the breast varies considerably. The black of the crown does not always extend on to the nape, this part being, I believe, the last to assume the full plumage. Most of these variations may probably be attributed to the condition of the bird during its last moult.

165. PLOCEUS ABYSSINICUS.

Loxia abyssinica, Gm. S. N. i. 1788, p. 860.

Ploceus melanocephalus (part.), Vieill. (nec Gm.), N. D. xxxiv. 1819, p. 131, Abyssinia, Senegal.

Fringilla velata (part.), Licht. (nec Vieill.), Verz. Doubl. 1823, p. 23.

Ploceus larvatus, Rüpp. Neue Wirb. 1835–40, p. 91, pl. 32, fig. 1.

Ploceus flavirostris, Rüpp. Syst. Uebers. 1845, pp. 69, 76, pl. 29, Abyssinia, Shoa.

Hyphantornis larvata, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

Textor larvatus, Bp. Consp. i. 1850, p. 440.

Hyphantornis melanocephalus, Antin. Cat. 1864, p. 63.

Ploceus solitarius, Württ. MS. fide Heugl. J. f. O. 1867, p. 297.

Hyphantornis abyssinicus, Finsch, Tr. Z. S. vii. 1869, p. 261.

Ploceus abyssinicus, Reichen. Zool. Jahrb. Jena, i. 1886, p. 131.

Hab. N.E. Africa: between about 16° and 5° N. lat.

a, ♂. July, Lado (*Emin Bey*).

166. PLOCEUS RUBIGINOSUS.

Ploceus rubiginosus, Rüpp. Neue Wirb. 1835–40, p. 93, pl. 33. fig. 1, Abyssinia.

Hyphantornis rubiginosa, Gray & Mitchell, Gen. B. .ii 1849, p. 351.

Textor rubiginosus, Bp. Consp. i. 1850, p. 442.

Hyphantornis castanosoma, Reichen. Orn. Centralbl. 1881, p. 79, Berbera; id. J. f. O. 1881, p. 334.

Hab. N.E. and E. Africa: from Abyssinia to Ugogo.

167. Ploceus castaneofuscus.

Ploceus castaneofuscus, Less. Rev. Zool. 1840, p. 99, Casamanse.

? *Ploceus isabellinus*, Less. t. c. p. 226, ♀ ?, Sierra Leone.

Hyphantornis castaneofusca, Gray & Mitchell, Gen. B. ii. 1849, p. 351.

? *Hyphantornis isabellina*, Gray & Mitchell, l. c.

Textor castaneofuscus, Bp. Consp. i. 1850, p. 442.

Ploceus (*Cinnamopteryx*) *castaneofuscus*, Reichen. Zool. Jahrb. Jena, i. 1886, p. 126.

Hab. W. Africa: from the Congo to Senegambia.

This species has been recorded from Nubia by Heuglin, on the authority of a single specimen, but I agree with Dr. Reichenow that there must be a mistake.

168. Ploceus tricolor.

Ploceus collaris, J. E. Gray (nec Vieill.), Zool. Misc. i. 1831, p. 6.

Hyphantornis tricolor, Hartl. J. f. O. 1854, p. 110, Sierra Leone.

Ploceus tricolor, Reichb. Singvög. 1861, p. 81.

Hyphantornis fusco-castanea, Bocage, Jorn. Lisb. 1880, p. 58, Rio Loemma; id. Orn. Angola, 1881, p. 558.

Hab. W. Africa: from the Congo to Sierra Leone.

Mr. T. E. Buckley, while with me at Abouri in the Aguapim mountains, shot out of a single flock two typically coloured *P. tricolor* and one *Hyphantornis fusco-castanea*, Bocage. I therefore feel no doubt that the latter form is only the immature of the present species.

169. Ploceus nigerrimus.

Ploceus nigerrimus, Vieill. N. D. xxxiv. 1819, p. 130, Congo.

Ploceus niger, Swains. An. in Menag. 1838, p. 306 (type exam. Paris Mus.).

Sycobius nigerrimus, Gray & Mitchell, Gen. B. ii. 1849, p. 352.

Malimbus nigerrimus, Sharpe, P. Z. S. 1871, p. 612.

Sycobius albinucha, Bocage, Jorn. Lisb. 1876, p. 247, W. Afr.

Ploceus (*Melanopteryx*) *nigerrimus,* Reichen. Zool. Jahrb. Jena, i. 1886, p. 125.

Hab. W. Africa: from the Congo to the Gold Coast.

The Gold Coast specimens are apparently always rather small, and have occasionally, but not always, white bases to the feathers of the hind neck; when these feathers are worn, a white collar at the back of the neck may sometimes be traced. One of these specimens formed the type of *Sycobius albinucha,* Bocage.

22. MALIMBUS.

	Type.
1805. *Malimbus,* Vieill. Ois. Chant. p. 71, pl. 42	*M. cristatus.*
1816. *Sycobius,* Vieill. Analyse, p. 33 . . .	*M. cristatus.*
1820. *Ficophagus,* Vieill.	*M. cristatus.*
1876. *Atalochrous,* Elliot, Ibis, 1876, p. 458 .	*M. racheliæ.*

Key to the Species.

a. Under tail-coverts black.
  a^{1}. Entire underparts black .... 170. *M. malimbicus.*
    a^{2}. Forehead red .... *M. malimbicus,* ♂.
    b^{2}. Forehead black .... *M. malimbicus,* ♀.
  b^{1}. Portion of throat and front of breast red.
    c^{2}. Crested. Forehead, space round the eye, and chin black .... 171. *M. cristatus.*
    d^{2}. Not crested.
      d^{3}. Forehead, crown, and entire neck red. Upper half of the throat and sides of the head black .... 172. *M. cassini.*
      e^{3}. Entire head and back half of the neck black .... 173. *M. nitens.*
Under tail-coverts orange-red.
  f^{1}. Upper half of the throat and entire sides of the head black .... 174. *M. scutatus.*
    f^{2}. With the entire crown, back, and sides of the neck scarlet .... *M. scutatus,* ♂.

*g*². With the entire head, back, and sides of the neck black .... *M. scutatus*, ♀.
*g*¹. With the entire throat and front half of the head orange-red .... 175. *M. rubropersonatus.*
c. Under tail-coverts yellow. Crown, neck, and lower throat orange-red. Upper throat and sides of head black.......... 176. *M. racheliæ.*

170. Malimbus malimbicus.

Tanagra malimbica, Daud. Ann. du Mus. i. 1802, p. 151, ♀, pl. 10. fig. 2.

Malimbus cristatus, Vieill. Ois. Chant. 1805, p. 71, pl. 43, ♀, Congo.

Ploceus cristatus, Vieill. N. D. xxxiv. 1819, p. 129, ♀, Congo.

Ploceus rubricollis, Swains. An. in Menag. 1838, p. 306, ex Vieill. pl. 43, ♀.

Euplectes rufovelatus, Fraser, P. Z. S. 1842, p. 142, Fernando Po; id. Zool. Typ. pl. 46.

Sycobius malimbus, Bp. Consp. i. 1850, p. 438.

Malimbus rubricollis, Strickl. Contr. Orn. 1851, p. 133, Gaboon.

Sycobius nuchalis, Elliot, Ibis, 1859, p. 393, Gaboon.

Sycobius rubricollis, Reichb. Singvög. 1861, p. 90, pl. 61. figs. 332–334.

Malimbus rufovelatus, Sharpe, Cat. Afr. B. 1871, p. 60.

Hab. W. Africa: from the Congo to the Gold Coast and Fernando Po.

171. Malimbus cristatus.

Tanagra malimbica, Daud. Ann. Mus. Nat. Hist. i. 1802, p. 151, ♂, pl. 10. fig. 1.

Malimbus cristatus, Vieill. Ois. Chant. 1805, p. 71, pl. 42, ♂ (type exam. Paris Mus.).

Ploceus cristatus, Vieill. N. D. xxxiv. 1819, p. 129, ♂, Congo.

Sycobius cristatus, Gray & Mitchell, Gen. B. ii. 1849, p. 352.

Sycobius nigrifrons, Hartl. J. f. O. 1855, p. 356, Rio Boutry.

Sycobius, sp.?, Bocage, Jorn. Lisb. 1866, p. 140.

Malimbus cristatus, Sharpe, Cat. Afr. B. 1871, p. 60.

Hab. W. Africa: from the Congo to the Gold Coast.

172. Malimbus cassini.

Sycobius cassini, Elliot, Ibis, 1859, p. 392, Gaboon (type exam. Brit. Mus.).

Malimbus cassini, Elliot, Ibis, 1876, p. 461, pl. 13. fig. 1.

? *Sycobius rubriceps,* Reichen. (nec Sundev.) J. f. O. 1876, p. 209, Camaroons.

Hab. W. Africa: Gaboon.

I have restricted the range of this species to the Gaboon, although it appears probable that *Sycobius rubriceps,* Reichen., belongs here; but as that name was given to an immature bird, I should hesitate to decide upon the species to which it belongs without seeing the type.

173. Malimbus nitens.

Ploceus nitens, J. E. Gray, Zool. Miscell. i. 1831, p. 7.

Sycobius nitens, Gray & Mitchell, Gen. B. ii. 1849, p. 352, pl. 87.

Malimbus nitens, Sharpe, Cat. Afr. B. 1871, p. 60.

Hab. Central and W. Africa: Ndoruma in Central Africa, and in West Africa from the Gaboon to Sierra Leone.

The sexes appear to be perfectly similar in plumage, for in a large series of specimens from the Gold Coast I find no variations.

174. Malimbus scutatus.

Sycobius scutatus, Cass. Pr. Ac. Philad. 1849, p. 157; id. Journ. Ac. Philad. 1850, p. 297, pl. 41. figs. 1 ♂, 2 ♀.

Malimbus scutatus, Sharpe, Cat. Afr. B. 1871, p. 60.

Hab. W. Africa: from the Gaboon to Sierra Leone.

The specific characters which distinguish *M. cassini* from *M. nitens* are the same as those which characterize the sexes in this species.

175. Malimbus rubropersonatus. (Plate II. fig. 2.)

The whole front half of the head, the throat, crop, and under tail-coverts bright orange-red. Remainder of the plumage:

upper parts glossy jet-black, underparts duller black, very faintly tinted with brown. Bill buffish brown; legs dark brown. Total length 5·2 inches, culmen 0·55, wing 3·2, tail 2·2, tarsus 0·8.

Most nearly allied to *M. scutatus,* from which it differs in being smaller, and in having the entire chin, throat, and front half of the head orange-red, and the bill pale.

Against its being an immature specimen of *M. scutatus,* which the colouring of the bill and legs might suggest, is the brightness of the red parts, and the absence of a brown shade on the back. The type was collected by the late Governor Ussher, in 1870, on the Gold Coast.

176. MALIMBUS RACHELIÆ.

Sycobius racheliæ, Cass. Pr. Ac. Philad. 1857, p. 36, Muni R.; id. Journ. Ac. Philad. 1862, p. 185, pl. 23. fig. 3.

Malimbus racheliæ, Sharpe, Cat. Afr. B. 1871, p. 60.

Hab. W. Africa: Gaboon.

23. TEXTOR.

		Type.
1828.	*Textor,* Temm. Pl. Col. pl. 446 . .	*T. albirostris.*
1836.	*Bubalornis,* Smith, Rep. Exp. Expl. Centr. Afr. 1836, p. 50	*T. panicivorus.*
1837.	*Dertroides,* Swains. B. W. Afr. i. 1837, p. 163	*T. albirostris.*
1861.	*Dinemellia,* Reichb. Singvög. p. 88, pl. 45. figs. 327, 328	*T. dinemelli.*
1861.	*Alectrornis,* Reichb. t. c. p. 89, pl. 45. fig. 330	*T. albirostris.*
1885.	*Limoneres,* Reichenow, J. f. O. 1885, p. 372	*T. dinemelli.*

Key to the Species.

a. Head and breast brown or black.
  *a*¹. With more than half of the basal portion of the inner webs of the quills white. Bill red and smooth .... 177. *T. panicivorus.*
  *b*¹. With no white on the inner webs of the quills .... 178. *T. albirostris.*

b. Head and breast white.
  *c*¹. White parts with a buffish shade. Above paler, and with broad white edges to most of the wing-feathers .... 179. *T. dinemelli.*
  *d*¹. White parts with an ashy shade. Above darker, and with no white edges to any of the wing-feathers .... 180. *T. boehmi.*

177. TEXTOR PANICIVORUS.

Loxia panicivora, Linn. S. N. i. 1766, p. 302.

Bubalornis niger, Smith, Rep. Exp. Expl. Centr. Afr. 1836, p. 51.

Textor erythrorhynchus, Smith, Ill. Zool. S. Afr. 1841, pl. 64.

Textor niger, Strickl. & Sclat. Contr. Orn. 1852, p. 150.

Textor panicivorus, Hartl. Orn. W.-Afr. 1857, p. 131.

Alectrornis panicivora, Reichb. Singvög. 1861, p. 89.

Hab. W. Africa: the whole of S. Africa and the Quanza river, with the exception of Cape Colony and Namaqualand.

a, ♂. August, Bamangwato; *b,* ♂. July, Transvaal; *c,* ♂. November, Damara; *d, e,* ♂ ♀. October, Benguela.

178. TEXTOR ALBIROSTRIS.

Coccothraustes albirostris, Vieill. N. D. xiii. 1817, p. 534.

Textor alecto, Temm. Pl. Col. 1828, pl. 446.

Dertroides albirostris, Swains. B. W. Afr. i. 1837, p. 163.

Alectrornis albirostris, Reichb. Singvög. 1861, p. 89, pl. 45. fig. 330.

Textor intermedius, Cab. v. d. Decken's Reisen, iii. 1869, p. 32, pl. 11, Dalaoni R. and Kisuani.

Textor scioanus, Salvad. Ann. Mus. Civ. Gen. 1884, p. 195, Shoa.

Hab. N.E., E., and W. Africa. South from about 16° N. lat. to Kisani in Central E. Africa, and from Senegambia to Bissao on the West Coast.

This species has been divided into three, and a good key to these varieties is given by Salvadori (Ann. Mus. Civ. Gen. 1884, p. 196); but in my opinion these slight variations only indicate local and not always constant races.

Typical *T. albirostris* has the bill buff and swollen at the base in adults, and brown and smooth in the immature. From the Upper White Nile I have a specimen in almost full plumage, with a smooth brown bill, which might belong to any of the three races.

T. intermedius has the bill smooth and red in the adults.

T. scioanus has the bill red and swollen at the base in full adults.

A typical specimen in my own collection, labelled "♂. 1-11-79: Dambi (Antinori)," is apparently fully adult. The bill is recorded as red, but is now buff with a dark tip. The bill in all these forms is stouter and slightly shorter than in the S.-African species.

179. TEXTOR DINEMELLI.

Textor dinemelli, Horsf. Rüpp. Syst. Uebers. 1845, pp. 72, 76, pl. 30, Shoa; Gray & Mitchell, Gen. B. ii. 1849, pl. 87. fig. 2 (spec. exam.).

Dinemellia leucocephala, Reichb. Singvög. 1861, p. 88, pl. 45. figs. 327, 328.

? *Alecto dinemelli*, Sclat. P. Z. S. 1864, p. 102, Unyamuezi (*Speke*).

Hab. N.E. and E. Africa: between about 12° N. lat. and 7° S. lat., from Shoa and Somali to Mamboio.

180. TEXTOR BOEHMI.

Textor böhmi, Reichen. J. f. O. 1885, p. 372.

Hab. Central E. Africa. Victoria Nyanza and Tanjanyika.

a, ♀. October, Gonda (*Böhm, Shelley Mus.*).

24. AMBLYOSPIZA.

		Type.
1850.	*Amblyospiza*, Sundev. Œfv. Vet.-Ak. Förh. Stockh. 1850 (April), p. 98 .	*A. albifrons.*
1850.	*Coryphegnathus*, Reichb. Av. Syst. 1850 (June), p. 79	*A. albifrons.*

The genus *Amblyospiza* comprises four nearly allied species, each confined to a separate subregion. The adult males of all the species have the bill slaty horn-colour, a white forehead, and a white speculum on the wing. In the immature birds the bill is yellow, and there is no white forehead or speculum; the upper parts are more rufous and somewhat mottled, and the underparts white, or nearly so, mottled with dark brown. To a bird in this plumage must be referred *Coryphegnathus schiffi*, Bp. (Consp. i. p. 451); but to which of the four species, an examination of the type can alone decide.

Key to the Species.

- *a*. Larger and darker. The white of the forehead never extending back over the entire front half of the crown. The white speculum much larger, about 0·4 inch broad.
  - a^1. Darker and generally smaller: wing 3·6 inches. The head and neck with scarcely any rufous shade........................ 181. *A. unicolor*.
  - b^1. Paler and generally larger: wing 3·6 to 4 inches. The head and neck decidedly more rufous than the back.
    - b^2. Head and neck deep chestnut-brown. Wing 3·9 to 4 inches .... 182. *A. albifrons*.
    - c^2. Head and neck lighter chestnut. Wing 3·6 to 3·7 inches........................ 183. *A. melanotis*.
- *b*. Smaller and paler: wing 3·3 to 3·35 inches. Head and neck fawn-colour. The white on the head extending over the entire front half of the crown. The white speculum much smaller, about 0·2 inch broad. Abdomen slate-colour. . 184. *A. capitalbus*.

181. AMBLYOSPIZA UNICOLOR.

Pyrenestes albifrons, Sharpe (nec Vigors), P. Z. S. 1873, p. 713, Mombas.

Pyrenestes unicolor, Fisch. & Reichen. J. f. O. 1878, p. 264, Zanzibar.

Amblyospiza unicolor, Shelley, P. Z. S. 1881, p. 589.

Coryphegnathus unicolor, Fisch. J. f. O. 1885, p. 134.

Hab. E. Africa: Zanzibar Province, between about 1° and 6° 30′ S. lat.

182. AMBLYOSPIZA ALBIFRONS.

Pyrrhula albifrons, Vigors, P. Z. S. 1831, p. 92, Inland from Delagoa Bay.

? *Pyrrhula frontalis,* Swains. An. in Menag. 1838, p. 319.

Pyrenestes frontalis, Smith, Ill. Zool. S. Afr. 1840, pls. 62 (ad.), 63 (young).

Pyrenestes albifrons, Gray & Mitchell, Gen. B. ii. 1849, p. 356.

Amblyospiza albifrons, Sundev. Œfv. Vet.-Ak. Förh. Stockh. 1850, p. 98.

Coryphegnathus albifrons, Bp. Consp. i. 1850, p. 450.

? *Coryphegnathus schiffi,* Bp. t. c. p. 451.

Hab. S. Africa: Transvaal, Natal, and the eastern portion of Cape Colony.

183. AMBLYOSPIZA MELANOTIS.

Coryphegnathus melanotis, Heugl. J. f. O. 1863, p. 21, White Nile.

Coryphegnathus albifrons, Heugl. (nec Vigors), Orn. N.O.-Afr. pp. 591, cxxxv.

Amblyospiza albifrons, Hartl. Abhandl. nat. Ver. Brem. vii. p. 100, Lado and Magungo.

Hab. N.E. Africa: Upper White Nile, between about 10° and 5° N. lat.

a, ♂. March. *b,* ♂. November, Magungo (*Emin Bey, Shelley Mus.*).

184. AMBLYOSPIZA CAPITALBUS.

Pyrenestes capitalbus, Temm. MS., Ashantee.

Coryphegnathus capitalbus, Temm. Bp. Consp. i. 1850, p. 451.

Hab. W. Africa: from the Congo to the Gold Coast.

Since the publication of the first part of my Review of the Family Ploceidæ, the following species has been described:—

LAGONOSTICTA NITIDULA, Hartl. Bull. Mus. Roy. Hist. Nat. Belg. iv. 1886, p. 145, pl. 4. fig. 2, ♂ and ♀?

I have examined the type of the adult male. It is a very well-marked form, which, according to my key of this genus, should be placed between *L. rufopicta* and *L. senegala,* with both of which it agrees in having the "bill red, with the culmen black," although in the illustration the bill is incorrectly coloured yellow.

It must not, on account of its name, be confounded with the *Estrelda nitidula*, Hartl. Ibis, 1865, p. 269, which I refer to the genus *Pytilia* (Ibis, 1886, p. 319).

II.—*A List of Birds collected by Mr. Walter Ayres in Transvaal and in Umzeilla's Country lying to the North-east of Transvaal, between the 23rd and 24th degrees of South Latitude and the 32nd and 33rd of East Longitude, with Notes by the Collector.* Communicated by JOHN HENRY GURNEY.

[SUCH of the following species as have been obtained within the Transvaal boundary, and have not been previously recorded from thence by Mr. Thomas Ayres or myself, are here numbered consecutively with those of which I have previously spoken in the pages of 'The Ibis.'—J. H. G.]

SCELOSPIZIAS POLYZONOIDES (Smith). Smith's Many-banded Hawk.

Female, adult, iris brick-red, shot in high trees, 19th June, 1885, at Lehtaba river, lat. 23° 10′ and long. 31° 30′.

ASTURINULA MONOGRAMMICA (Temm.). One-streaked Hawk.

Female, shot at Buffel's (Transvaal), September 1, 1885.

I have met with these birds in the Rustenberg district; they are not so shy as most Hawks, and with a little caution one can generally get within shot of them; they are always found in bushy country.

ACCIPITER MINULLUS (Daud.). Least South-African Sparrow-hawk.

Female, adult, Lehtaba river, August 21, 1885. Length $10\frac{3}{4}$ inches, tail 5, wing $6\frac{1}{2}$. Irides and legs yellow. Stomach contained small birds. Shot from the top branches of a high tree.

385. Lophoaetus occipitalis (Daud.). Long-crested African Hawk-eagle.

Male, immature, shot 1st July, 1885, at the junction of the Mashupan and Olifants rivers (Transvaal).

There was a dead stump in an old Kaffir garden close to my skerm on which I several times noticed this bird sitting, no doubt watching for rats; and when I had the time to spare I shot and preserved it. I only saw one other at that place, and had not previously met with them since leaving the coast. These Eagles perch on some low bush or dead stump when watching for their prey, which principally consists of rats, which they swallow whole; they are not shy birds, and when disturbed they fly low and usually settle again close by.

Haliaetus vocifer (Daud.). African Sea-eagle.

Male, adult, shot at Rovi-rand, in Umzeilla's country, July 1885.

I met with a few of these Eagles on the Olifants and Lehtaba rivers; the present specimen I killed with my rifle while it was perched on the branch of a tree overhanging the Spruit at Rovi-rand near the Lehtaba river.

These Eagles are shy birds, and it is very difficult to get within shot-range of them; one evening, however, just at dusk, one allowed me to pass within twenty yards of it as it was sitting on a dead tree, where it had evidently taken up its quarters for the night; for, on returning at early dawn, after watching all night for game, I found it still in the same place, and again it allowed me to pass close to it.

Huhua lactea (Temm.). Verreaux's Owl.

Female, shot 5th August, 1885, near the Sinquitzie river (a small river in Umzeilla's country), in lat. 23° 30′ and long. 32°.

Passing under a large tree in the dense bush by which the river Sinquitzie is bordered for about a mile on either side, I disturbed this Owl, which flew off and alighted high up in the branches of another very large tree close by, where it had hardly settled when I heard a rush of wings and saw a small

Eagle coming at lightning speed, which dashed viciously at the Owl several times, but did not succeed in knocking it off its perch, and in fact the Owl did not seem much concerned: the Eagle then settled on a tree close by, and from the way in which it stretched its neck and looked about, I thought it seemed surprised and disappointed. It was an active-looking little Eagle, with a long neck, small head, and feathered down to the toes; all its upper parts were dark slate-colour, the lower parts white with a few dark blotches; it was very like *Nisaëtus spilogaster* in appearance and build, but smaller*.

After observing the Eagle for a few seconds I turned my attention to the Owl, which I shot with a bullet, having been at the time in search of large game.

I met with a pair of these Owls at Buffels, and fired at one with No. 7 shot at very close range, but failed to bring it down. I had also a close shot at one at Rovi-rand, but it got away; they are certainly very tough. I think they vary a good deal in size. They seem to have a wide range, as I have found them in the Free State, in the Rustenberg district, and along the Limpopo; when once disturbed by day they are very shy and difficult to approach.

[I now agree with Mr. Sharpe that *Huhua verreauxi* of South Africa is not specifically distinct from the more northern *H. lactea*, as I have already explained in the P. Z. S. 1884, p. 560.—J. H. G.]

Glaucidium perlatum (Vieill.). African Pearl-spotted Owlet.

Female, Lehtaba river-drift, August 1885.

This little Owl, when I shot it, had just killed a large striped field-mouse; this was about eight o'clock in the morning, and the sun was well up.

These Owls are often to be seen by day flying from tree to tree, and appear to be very wide awake; they also call a good deal in the daytime. I have found them plentiful along the Limpopo river, and also in the Rustenberg district wherever there is suitable bush; they have a dipping flight, opening and shutting their wings pretty quickly, very unlike the steady flight of the larger Owls. Other small birds have a great dislike to them, and never lose a chance of tormenting them and driving them about.

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* [I think there can be little doubt that this Eagle was a small male of *Nisaëtus spilogaster*.—J. H. G.]

386. Tæniglaux capensis (Smith). African Barred Owl.

Female, shot 2nd July, 1885, at the junction of the Mashupan and Olifants rivers (Transvaal).

I shot this Owl in a dense strip of bush that skirts the Mashupan river. I had not before met with it, but later on I saw another on the Sinquitzie river, though, having only a rifle with me, I could not secure it.

[The late Mr. E. Buxton informed me that he found this species common at Dar-es-Salaam, on the coast, about 70 miles S.W. of Zanzibar. *Conf.* Shelley, P. Z. S. 1881, p. 563, and 1882, p. 305.—J. H. G.]

Coracias caudata, Vieill. Lilac-breasted Roller.

Male and female, shot at Buffels' Kraal, May 1885.

These are shy birds and, as a rule, difficult to approach, invariably settling on the top of some isolated tree or bush. They are generally to be found singly or in pairs; but when the grass is burned in suitable localities I have seen as many as a dozen or more together; they then follow the course of the fire, settling on trees and bushes in front of the flames and pouncing down on beetles or grasshoppers that are driven out by the heat.

Ceryle maxima (Pall.). Great African Kingfisher.

Male, shot at Lehtaba river-drift, August 1885.

These birds, though nowhere plentiful, are to be found on nearly all the rivers in this country, but they are extremely shy and difficult to shoot. One of their nests was discovered by my Boer driver in a perpendicular bank of a little stream running into the Lehtaba at the drift; it was in a hole about four feet from the top of the bank, and, from below, a man standing in the water up to his middle could just reach it. The place was an awkward one to get at, especially as there were crocodiles about; however my driver and a Kaffir, by digging with a spade to a considerable depth, managed to get at the nest. The Boer put his arm into the hole and felt the eggs; he also felt the old bird, not sitting on the eggs, but a little on one side, where it remained and allowed itself to be caught: it was my intention to let it go, but my companion wishing for its skin it was retained, and on dissection proved to be a male bird. The eggs were four in number, and white.

387. BUCEROS BUCCINATOR, Temm. Trumpeter Hornbill.

Two females, shot July 1885, at the junction of the Mashupan and Olifants rivers (Transvaal).

I found a few of these strange birds in the bush along the above-mentioned rivers, where they were feeding on wild figs. The last time I had previously met with this species was many years ago on the coast of Natal.

These Hornbills are shy and difficult to approach; their flight is peculiar, and they make a great noise with their wings; their note is loud, harsh, and not easily described, a sort of *kor-kor, kor, kor, kor-kor,* which has a melancholy sound.

[The two females sent measure as follows, the larger bird being apparently the older of the two:—

Wing. in.	Tail. in.	Tarsus. in.
10·55	8·60	1·80
10·40	8·30	1·60

In Sharpe's 'Layard' the wing is given as 11·50 and the tail as 9·50, which may probably be the measurement of a male bird.—J. H. G.]

IRRISOR ERYTHRORHYNCHUS (Lath.). Red-billed Woodhoopoe.

Male, shot at Rovi-rand, June 1885.

I found these birds tolerably plentiful all along my route wherever there was suitable bush; they are found in small families, varying from three to eight in number; they search for food principally amongst the dead branches of trees and dead creepers, and are fond of hunting over old dead stumps, around which they move almost as nimbly as a Woodpecker.

388. Rhinopomastes cyanomelas (Vieill.). Scimitar-billed Wood-hoopoe.

Female, shot at Rovi-rand, June 10, 1885.

These birds occur singly or in pairs; though I have not found them plentiful in any one locality, they have a wide range, and I have met with them more or less wherever I have travelled in the Transvaal.

[The specimen sent was obtained just beyond the Transvaal border; but, on the strength of Mr. Walter Ayres's note, I have included the species in the Transvaal enumeration. I may add that in the present specimen there is no white on the inner primary-coverts, and that in 'The Ibis' for 1868, p. 44, I recorded a male in which the white spot on these coverts existed on one wing only.—J. H. G.]

Centropus natalensis, Shelley. Natal Spur-heel Cuckoo.

Male, shot May 30, 1885, at Tentie river, on the Transvaal boundary.

These birds are found in the thick reeds and underwood growing along the streams; they search for their food on the ground, and depend for their safety more on their legs than on their wings; when once disturbed it is difficult to find them again, as they hide away either on the ground or in the dense underwood.

I shot the specimen sent whilst it was creeping about in the thick leaves of a wild palm-tree which grew on the edge of the river.

[The specimens referred by me to *C. senegalensis* in 'The Ibis,' 1871, p. 261, and 1884, p. 225, were incorrectly named, and are examples of *C. natalensis*, of which I now possess four Transvaal skins. None of these show any trace of a white eyebrow; this latter is evidently by no means a constant character in this species.—J. H. G.]

389. Barbatula bilineata, Sund. Bridled Barbet.

Male and female, shot 27th July, 1885, at Umzingeilla's, near the Olifants and Mashupan rivers (Transvaal).

Length of male in the flesh 4 inches, wing $2\frac{1}{16}$, tail 1; bill black, legs ash-colour.

I noticed these little Barbets hunting about for insects on a tall species of acacia tree in the thick bush adjacent to the Mashupan river, and was fortunate enough to secure them both. I had never met with these Barbets before, nor did I see any others of them where I killed this pair.

[In the pair sent no difference is perceptible between the sexes. The female bird has been added to the collection at the British Museum.—J. H. G.]

Mesopicus namaquus (Licht.). Bearded Woodpecker.

Male, shot 5th May, 1885, at Sibideilla's (Transvaal).

These Woodpeckers are not at all plentiful, but are to be found sparingly in most parts of the country where the bush is favourable: they make a loud tapping noise that can be heard at a considerable distance, and is generally answered at a distance by the bird's mate; it is certainly a call-tap, heard at regular intervals, having always the same sound and invariably the same number (four) of taps.

Campothera abingtoni (Smith). Golden-tailed Woodpecker.

Male, shot June 13, 1885, at Rovi-rand, Umzeilla's country.

I found these birds fairly plentiful, especially in the Mopani forest, near Lehtaba river-drift.

Campothera bennetti (Smith). Bennett's Woodpecker.

Male, Lehtaba river.

Female, Buffels (Transvaal).

The same remarks apply to this species as to the preceding one. I have found both in the Rustenberg district amongst the Boukenhout trees, which are not unlike the Mopani.

390. Psittacus fuscicapillus, Verr. & Des Murs. Goe Parrot.

Two males, shot 24th July, 1885, at Umzingeilla's, near Olifants river (Transvaal).

I first found these Parrots a little below Buffels, and from thence, more or less, till I got to Umzingeilla's, where they are plentiful, and the Kaffirs told me that in the summer months they come in great numbers and do much damage to their crops of Indian corn and millet. I generally met with them in pairs, but sometimes saw as many as seven or eight together. They are fond of sitting in the top branches of some dead tree, and are very difficult to see, as, when approached, they hide most cleverly behind the branches; I have sometimes stood for nearly half an hour gazing up at a dead tree in vain, though I knew that two or three of these birds were hiding amongst the branches. They continually utter their loud and harsh cry, but see them you cannot, even in trees where one would think a mouse would hardly evade detection. In winter their food consists of the fruit of the wild fig-trees, of which there are an abundance, in full bearing, along the Olifants and Mashupan rivers.

391. Cossypha natalensis, Smith. Natal Chat-thrush.

Female, shot 24th July, 1885, at Umzingeilla's near Olifants river (Transvaal).

I met with a few of these birds in the above locality and also at Rovi-rand; they are found in the dense underwood along the river-banks searching for their food on the ground, and are difficult to shoot on account of the impenetrable nature of the bush which they frequent.

392. Cossypha quadrivirgata, Reich. Four-streaked Chat-thrush.

Male, near Olifants river, Transvaal.

This bird I shot on 29th July, 1885, in the thick Mopani forest some few miles from Umzingeilla's. I do not remember having met with this species previously, and I know nothing of its habits.

[The specimen sent is the most southern example of this species which has come under my notice; it has been added to the collection of the British Museum.—J. H. G.]

393. Saxicola shelleyi, Sharpe. Shelley's Wheatear.

Two males, shot at Lehtaba river-drift, August 1885.

Female, shot at Umzingeilla's, Olifants river (Transvaal), 29th July, 1885.

I do not remember to have met with these birds before. They seek their food on the ground, constantly flying up and settling on the lower branches of some convenient tree, and then returning to the ground; they are constantly on the move, and are rather shy, flying, when disturbed, from tree to tree, and not admitting of a near approach.

[The above specimens agree in coloration and markings with the description given by Mr. Sharpe at p. 246 of his edition of 'Layard,' and at p. 52 of vol. vii. of the British Museum 'Catalogue,' except that in the present female the entire chin, throat (from one ear-covert to the other), and jugulum are transversely, but somewhat irregularly, barred with blackish brown. Both the above males measure 4·20 inches in the wing, and the female 3·70; the tarsus measures 1·10 in all three specimens. This species is, I think, obviously a very near ally of *S. monticola,* and I can hardly think that these two Chats ought to be generically separated merely on account of a very slight difference in the proportions of their primaries; but the present bird has been referred to the genus *Thamnolea,* whilst the Mountain Wheatear has been retained in that of *Saxicola. Vide* Sharpe's 'Layard,' p. 819.—J. H. G.]

394. CINNYRIS GUTTURALIS (Linn.). Natal Sun-bird.

Male, shot at Umzingeilla's, near the Olifants and Mashupan rivers (Transvaal), 1st July, 1885.

Whilst trying for a shot at Sea-cows one morning, along the Mashupan, I noticed several of these handsome little birds busily extracting honey from the flowers of a shrub in blossom; there was only a patch of it a few yards in circumference, but this was alive with Sun-birds, and, besides the present species, I noticed *C. mariquensis* and *C. talatala.* The next day I went with my shot-gun and obtained the specimen now sent; I subsequently saw two others near Buffels, but was not able to secure them. This is the first time I have met with the Natal Sun-bird since leaving the coast of Natal in 1870.

Cinnyris talatala (Smith). South-African White-breasted Sun-bird.

Male, immature.

I shot this specimen at Rovi-rand on 19th June, 1885; it was hopping about very quickly, sipping honey from the flowers of a creeper which grew in the thick underwood along the banks of the spruit, and was quick and restless in its movements; on dissection it proved to be a male. I found no other Sun-bird about this spot.

[The present specimen has been kindly identified for me by Captain Shelley as a young male of *C. talatala*.—J. H. G.]

395. Anthodiæta collaris (Vieill.). Natal Collared Sun-bird.

Female, Umzingeilla's, near Mashupan river (Transvaal), 1st July, 1885.

I met with a few of these tiny Sun-birds in the dense bush along the Mashupan, where they find flowering creepers to their taste.

Graucalus pectoralis, Jard. & Selby. Pectoral Cuckoo-shrike.

Female, Rovi-rand near Lehtaba river, 13th June, 1885.

Length 9¾ inches, wing 5¾, tail 4¾. Bill and legs black; eyes dark brown, and very large for the size of the bird. When I shot this specimen it was catching insects in the top branches of a high mimosa tree; from its flight I mistook it for a Cuckoo, and only discovered my mistake when I picked it up; its stomach contained green caterpillars and the shell of a green locust. I unfortunately lost the label on which I had noted the sex of this specimen, but believe it to have been a female.

Male, shot 20th June, 1885, at the same spot as the female. I have not met with this species in Transvaal, neither do I remember seeing it in Natal.

[The two specimens sent appear to be correctly sexed. I do not include them amongst the Transvaal species, as they were killed in a locality beyond the Transvaal border.—J. H. G.]

396. Sigmodus retzii (Wahlb.). Retzius's Helmet-shrike.

Male, nearly adult, shot 23rd July, 1885, at Umzingeilla's near Olifants river (Transvaal).

Female, fully adult, same date and place. Eyes yellow; bill red, but yellow at the tip; legs red; eyelids red and deeply notched.

Whilst hunting in some rather open low bush I came across a family of about ten of these strange birds, of which I only managed to secure two; in flight and habits they exactly resembled *Prionops talacoma*, frequenting bushes and hunting on the ground or on the lower branches of stumps and trees for insects. Their flight is heavy, and they fly low, and never go far at a time; but when disturbed they go from bush to bush, and commence feeding again directly they settle.

[In Mr. Sharpe's edition of Mr. Layard's 'Birds of South Africa,' a clerical error has occurred in the treating of the genus *Sigmodus*, which it may be useful here to point out; at p. 407 a description of *S. rufiventris* has by some accident been substituted for that of *S. tricolor*. Both of these species have, however, been correctly described by Mr. Sharpe in his 'Catalogue of the Birds in the British Museum,' vol. iii. pp. 323 and 325.—J. H. G.]

397. Laniarius sulphureipectus, Less. Yellow-fronted Bush-shrike.

Male, shot 9th June, 1885, at Lehtaba river.

Female, shot 24th July, 1885, at Olifants river (Transvaal).

I met with these birds in the thick bush on the banks of the rivers, where they find their food amongst the thick creepers, &c.; they are also to be found searching for insects in the mimosa trees. I met with this species several times in favourable localities, and I also noticed it in 1884 some two hundred miles down the Limpopo, in the thick bush that grows along the banks of that river.

Laniarius poliocephalus, Licht. (*L. icterus* of the first edition of Layard's 'Birds of South Africa'). Large Grey-headed Bush-shrike.

Male and female, shot at Lehtaba river-drift, 20th August, 1885.

I found a pair of these birds in the bush which skirts the Lehtaba river, and was fortunate enough to get both of them; a few days previously a bird of this species had been observed several times by a Kaffir picking at some strips of meat cut from a giraffe and hung on the branches of a tree to dry. I had not met with this Shrike since leaving Natal, and there they are scarce; they are fond of searching for their food amongst thick creepers.

[These specimens appear to have been killed beyond the Transvaal boundary, and I have therefore not included them in the Transvaal list.—J. H. G.]

TELEPHONUS SENEGALUS (Linn.). Senegal Tchagra-shrike.

Female, shot at Rovi-rand, 14th June, 1885.

I frequently met with this bird. It is generally found near water, hunting on the ground for its food; when disturbed it flies up into a bush or tree; its flight is heavy, and it never goes far without settling.

[In 'The Ibis' for 1879, p. 399, the specific name of *erythropterus* was by an error of mine applied to the present species.—J. H. G.]

398. BUPHAGA ERYTHRORHYNCHA, Stanl. Red-billed Oxpecker.

Male, shot 1st May, 1885, at Olifants river (Transvaal).

I met with but very few of these birds, which seem to be disappearing as the large game becomes scarcer. The specimen sent was settled with two others on our cattle, making their breakfast of ticks; when disturbed they flew on to the top branches of a high tree close by, whence I shot one of them.

HYPHANTURGUS OCULARIUS (Smith). Smith's Weaver-bird.

Two males, shot at Rovi-rand, 10th and 14th June, 1885.

Both these specimens were shot at the edge of the spruit in Rovi-rand, a small stream close to the Lehtaba river; one was searching for food amongst the leaves of a wild date-tree growing in the thick underwood, and the other was hopping about in some high grass and reeds, from whence it flew, when disturbed, into a tree, where I shot it.

[The specimen shot on 14th June is in the full breeding-plumage of the male bird; the other shot on 10th June, which is also marked as a male by Mr. Ayres, agrees with the description of the female given in Sharpe's 'Layard,' p. 436, and seems therefore not to have yet acquired its nuptial dress. Mr. Ayres describes the latter specimen as having the "Eyes light brown, the legs ash-coloured, and the bill light brown, with the base of the lower mandible flesh-coloured.—J. H. G.]

399. Malimbus rubriceps (Sund.). Red-headed Weaver-bird.

Two females, shot at Rovi-rand, 17th June, 1885. Length 5½ inches, wing 3⅛, tail 2. Eye reddish brown; bill orange; legs flesh-coloured.

I found a small flock of six or eight of these birds, some of which were feeding on the ground, and others perched on low thorn-bushes; I killed two at a shot, both females, but they all appeared to be in the same dull plumage. I do not remember to have previously met with this species.

[The present specimens appear to have been killed beyond the Transvaal boundary; but I enumerate the species as belonging to Transvaal, it having been there obtained by Dr. F. H. Guillemard. The females sent by Mr. Ayres agree with the description given by Dr. Guillemard in 'The Field' newspaper of 13th November, 1880, p. 714, and quoted in Sharpe's edition of Layard's 'Birds of South Africa,' p. 445. I think it probable that the small flock from which these females were obtained may have also comprised male birds which had not attained their nuptial dress.

The Weaver-bird described by Du Bocage ('Birds of Angola,' p. 334) under the title of *Sycobius rubriceps*, and identified by him with the present species, is stated in his description to have "la région auriculaire noirâtre," which is not the case either in the male of the present species preserved in the British Museum, or in the females sent by Mr. Ayres, one of which has also been placed in the Museum. A very distinct species likewise received the name of *Sycobius rubriceps* from Reichenow, in the 'Journal für Ornithologie' for 1876, p. 209; but, according to the law of priority, the name cannot be retained for the species there described by Reichenow, which, moreover, seems to me, by his description, to be identical with *Malimbus cassini* of Elliot, first described in 'The Ibis,' 1859, p. 392, and subsequently figured in 'The Ibis,' 1876, pl. xiii., where a figure of the male, in full plumage, of the true *Malimbus rubriceps*, taken from the male which is now in the British Museum, is also given.—J. H. G.]

Spermestes cucullatus, Swains. Hooded Dwarf Finch.

Two males and two females, shot at Rovi-rand, 16th June, 1885. Eye brown; legs black; upper mandible black, lower ash-colour.

I found these little birds fairly plentiful in flocks, varying from four or five to as many as fifteen in number; they feed on small seeds, and are generally found in low open bush near water. They feed a good deal on the ground, though I have at times seen them on the top branches of high trees. They are shy little birds, and when disturbed often fly quite out of sight.

[The specimens sent appear to have been obtained beyond the Transvaal boundary.—J. H. G.]

Lagonosticta senegala (Linn.). Little Ruddy Waxbill.

I found five of these little birds together at Rhinosterpoort, and killed them all at one shot; they are generally found in thick grass or scrub, and are fond of pecking about on little patches of bare ground. The eye in this species is red, and the eyelid yellow. The specimens sent were shot on 13th May, 1885, and I noticed several others subsequently.

400. Chalcopelia afra (Linn.). Emerald-spotted Wood-dove.

Female, shot at Rovi-rand, 17th June, 1885.

These pretty little Doves are generally scarce, and only to be found singly or in pairs; but about the Mashupan river I found them rather plentiful, and on one occasion saw as many as seven together; they are usually found near the edge of the bush skirting the rivers. They search for their food on the ground, settling, if disturbed, on some low tree or bush. They are most difficult birds to see; I have met with them in the Rustenberg district.

[Although the specimen sent was obtained beyond the Transvaal boundary, I include the species in the Transvaal lists, as having been observed by Mr. W. Ayres in the Rustenberg district.—J. H. G.]

FRANCOLINUS PILEATUS, Smith. Pileated Francolin.

Male, shot May 1855, at Lehtaba river-drift.

These Francolins inhabit the thick bush on the river-banks, but are not very plentiful; when frightened they stick their tails straight up and erect their head-feathers, which gives them a crested appearance.

FRANCOLINUS SUBTORQUATUS, Smith. Cogni Francolin.

Female, shot May 1885, at Lehtaba river-drift.

These birds are fairly plentiful, frequenting the open bush-country, where they are found in coveys, varying from five or six in number to a dozen; they lie very close, and, except with a good dog, are difficult to flush.

401. OTIS CÆRULESCENS, Vieill. Blue-breasted Bustard.

Male, shot 6th April, 1885, between Potchefstroom and Middelburg (Transvaal).

I met with eight or ten of these birds near Klip river-drift, but only succeeded in bagging two of them. This is the only spot in the Transvaal, I believe, where these Bustards are to be found; but I killed some, many years ago, at Rhinoster river, in the Free State. They are found in pairs or in small companies of five or six, and, as a rule, are not so shy as the other Bustards; if you walk round them, gradually decreasing the distance, they will squat and allow you to get within shot. They are found in quite open veldts, and in the Free State I generally met with them near homesteads. They have a loud croaking note.

402. Parra africana, Gmel. Greater African Jacana.

Female, shot 30th July, 1885, at Mashupan river-drift (Transvaal). Wing 7·05 inches, tarsus 2·80, middle toe *s. u.* 2·90.

I found these birds on most of the rivers and swamps where there were suitable weeds and stagnant water; they may be seen sometimes running along the edge of the water picking up insects, and at other times walking on the leaves of the water-lilies or on the thick weeds that float on the surface of the still pools.

Whilst watching one day for Sea-cows on the river Mashupan, I had a good opportunity of observing one of these birds for at least a quarter of an hour; it was running about on a bed of weeds that floated on the surface of the pool just below me, and kept incessantly turning with its beak lily-leaves and branches of weed, and then pecking at, no doubt, small water-insects or shells which adhered to the lower surface of the leaves. Some of the bundles of weed were heavy, and turning them over seemed quite hard work for the bird; but it was very persevering, and not satisfied till it had turned the weeds completely over.

Limnocorax niger (Licht.). Black Crake.

Female, shot June 1885 at Rovi-rand.

I found a good many of these birds in the spruit at Rovirand, and also in other small streams, where there were pools of still water with weeds suitable to their habits; they are shy birds, and get away very quickly in the reeds on the approach of danger; when moving about on the feed, they continually utter their note, *chuck-chuck-chuck*.

Ardea melanocephala, Vig. & Childr. Black-necked Heron.

Male and female, shot 6th May, 1885, at Unigoopie river, Leibideila's.

I found about ten of these Herons sitting on the top branches of a clump of high trees, where they had nests; I could not climb to the nests, which were high up in the top branches, but think they must have contained eggs or young, as the birds would not be driven away from them. I fired four shots at them, killing as many birds, but the others flew, circling round, and settled again immediately.

These Herons are fond of searching for food in the Kaffir gardens; the stomach of one that I shot contained a mouse.

BUTORIDES ATRICAPILLA, Afzel. African Black-headed Heron.

Male, shot at Rovi-rand, 19th June, 1885. Female shot at the same place, 17th June, 1885. Iris yellow; upper mandible black; lower mandible yellow, with a black stripe along the upper edge.

I found these little Herons on several of the small streams where the banks were well wooded; those I saw were perched on trees or bushes on the edge of or overhanging the water. When disturbed they utter a harsh cry, not unlike that of the Great Kingfisher (*Ceryle maxima*).

403. LEPTOPTILUS CRUMENIFER (Cab.). African Marabou.

Two specimens, both in process of change from immature to adult dress, shot at Rovi-rand, 11th June, 1886, one of which was found to be a male, and the other was believed to be a female; but injury from the course of the bullet prevented this from being ascertained with certainty.

Male—length 4 feet 10 inches, wing 2 feet 7 inches, tail 1 foot 2 inches, expanse of wings from tip to tip 9 feet 8 inches. Iris brown; bill dirty green; legs black, but covered with fine ashy powder; a patch of yellow skin at the back of the neck, where it joins the body.

Presumed female—length 4 feet 3 inches; wing 2 feet 3 inches; tail 1 foot 1 inch.

I have found these birds very scarce; but in 1884 I met with one down the Limpopo, near the Mallabas; and just after the Boer war a few visited Pretoria, and fed on the dead mules and cattle which were lying about the camp.

The two specimens sent came about our camp, and I killed them with the rifle: the stomach of one contained bits of dry game, skin, and bones, picked up at a deserted Boer camp close by; that of the other was crammed full of what appeared to be horse-dung.

These birds generally come with the Vultures, and with them may be seen circling round at great altitudes; like the Vultures, they often settle about on the trees before alighting on the ground to commence a meal.

[Although the specimens sent were killed beyond the Transvaal boundary, yet, as Mr. Walter Ayres has met with other specimens within that limit, I include the species in the Transvaal list.—J. H. G.]

401. DENDROCYGNA VIDUATA (Linn.). White-masked Duck.

Female, shot 13th November, 1885.

This, with us very scarce Duck, was shot by my friend Mr. J. Taylor, of Potchefstroom; he saw fifteen of these Ducks sitting in a shallow drift of the Movi river, just above Potchefstroom, and succeeded in bagging seven with a right and left shot, one of which he kindly gave to me. These birds must have wandered from some distant haunts, as this is certainly not their habitat, though I remember having seen one many years ago in a vley about six miles from Potchefstroom.

III.—*On* Empidonax brunneus *and its allied Species.*

By P. L. SCLATER.

AT Mr. Ridgway's kind request the authorities of the Smithsonian Institution have most obligingly sent over to me for examination the typical specimens of *Empidonax brunneus*, together with examples of *Empidochanes fringillaris*, and of the (so-called) *E. oliva*, concerning which Mr. Ridgway has written in the last number of this Journal ('Ibis,' 1886, p. 460). In his *Empidonax brunneus* I at once recognized the bird which I have heretofore usually called *Empidochanes fuscatus*. But Mr. Ridgway has been able to examine the original types of *Muscipeta fuscata* of Pr. Max., and has shown that it does not belong to this species. There is no doubt, therefore, that my identification was incorrect. At the same time, however, I may say that I believe I have found an earlier name for this species than *Empidonax brunneus.*

The *Muscipeta bimaculata* of d'Orbigny and Lafresnaye (given in the 'Museum Heineanum' as a synonym of *Myiophobus olivus*) was quite unknown to me until a short time since, when a typical specimen of it from the Paris Museum was kindly lent to me for comparison. The specimen is not in very good condition; but after a close examination of it I have come to the conclusion that it belongs to the same species as Mr. Ridgway's types of *Empidonax brunneus.* It follows that, adopting Mr. Ridgway's view that this bird should be referred to *Empidonax* and not to *Empidochanes,* we must in future call this species *Empidonax bimaculatus.*

Of *Empidonax bimaculatus* my collection and that of Messrs. Salvin and Godman contain together eight examples from various localities in South-eastern Brazil. A ninth skin, which I must also refer here (in Messrs. Salvin and Godman's collection), is from Pebas in Eastern Peru (*Hauxwell*), showing that *Empidonax bimaculatus* is not quite restricted to South-eastern Brazil.

Of a nearly allied northern representative of *Empidonax bimaculatus,* distinguished by its smaller size, more olive hue, and yellower belly, the two collections above named contain three examples from Guiana, Venezuela, and Upper Amazonia. This is, I think, the species that is *most likely* to be the *Muscicapa oliva* of Boddaert (based on Pl. Enl. 574. fig. 2), and I shall call it for the present *Empidonax oliva.* Like *E. bimaculatus* it has short tarsi, small feet, and a white lower mandible.

As regards the three species of *Empidochanes* distinguished by Mr. Ridgway in his article above referred to ('Ibis,' 1886, p. 461), I am as yet acquainted with only two of them. Of *E. fringillaris* of Brazil a series of six specimens (e Muss. P. L. S. et S.-G.) is now before me. Two of these are Nattererian skins, and typical specimens of *E. fringillaris* of Pelzeln. But of *E. fuscatus* (Max.), if distinct, I have as yet seen no traces. *E. fuscatus* of Pelzeln (Orn. Bras. p. 115), I may remark, is *Empidonax bimaculatus*.

Of Mr. Ridgway's third species of *Empidochanes* (*E. oliva* [?] of Lawrence), for which the alternative name "*vireoninus*" is suggested, seven specimens belonging to the two collections above mentioned are before me, from Colombia, Amazonia, Venezuela, and Tobago. One of these is the type of *Ochthœca arenacea*, Scl. et Salv. (P. Z. S. 1877, p. 20). I fear, therefore, that Mr. Ridgway's suggested term for this bird will also have to give way, and that the species must be called *Empidochanes arenaceus*. It must be confessed, however, that Mr. Ridgway could not have been expected to look for a name for an *Empidochanes* in the genus *Ochthœca*, and I feel that I almost owe him an apology for pointing out this identification!

IV.—*Observations in the Eastern Pyrenees.* By JAMES BACKHOUSE, Junr., M.B.O.U.

DURING the month of January, 1886, I made a short stay in the Department of the Pyrénées-Orientales in order to see a little of the ornithology of the district in the winter season; and although, owing to the unusual severity of the weather (during the greater part of my visit) and to the shortness of time at my disposal, the results were not specially good, yet, considering that this Department has never been thoroughly worked, I feel that I cannot do better than simply record what observations I was able to make on this occasion—the more so, as the season of my visit was the one of all others during which the avifauna of the district is least observed.

On January 4th I arrived at Perpignan, the chief town of the Department. Here the necessary "*permis de chasse*" was obtained, which, by the way, occupied most of the morning. Here also I found time to examine the market, which is a very rich one, and is always worth a visit, from the variety of material brought into it from the numerous marshes between Perpignan and the sea on one side, and from the mountainous regions further inland on the other.

From Perpignan I proceeded to Vernet-les-Bains, a small village and favourite French summer resort, snugly situated at the base of Mont Canigou, at an elevation of about 2000 feet above the sea-level. Fortunately the weather, for the first two or three days, was all that could be desired, and observation was consequently easy. But before I left Vernet the weather had become unsettled and exceedingly cold, and snow, rain, and violent winds prevailed.

At Vernet, too, I had the opportunity of looking over a small collection of birds shot in the district, and from this, though rapidly going to ruin (if not actually arrived there!), I was able to make notes of several species which I had not the good fortune to meet with alive.

My next point of observation was the valley of the Tech, lying immediately to the south of the Canigou range, bordered again to the south by the Spanish frontier. Here the nature of the ground is more rugged and wild, and consequently the avifauna (in winter time at any rate) is less varied and more restricted in numbers.

Upon leaving the Tech valley, I again descended to Perpignan, and again visited the bird-market and explored the flat, marshy region contiguous to the sea.

The following is a *résumé* of my notes on the principal species obtained or observed:—

1. TURDUS VISCIVORUS (Linn.). Missel Thrush.

2. TURDUS MUSICUS (Linn.). Song Thrush.

Both pretty abundant in the markets, but the latter less so.

3. TURDUS ILIACUS (Linn.). Redwing.

Not actually met with in the Pyrénées-Orientales, though seen in the Narbonne market in the adjacent Department of Aude. Lacroix, in his 'Catalogue Raisonné des Oiseaux observés dans les Pyrénées Françaises,' states that it is found in this Department in winter.

4. Turdus pilaris (Linn.). Fieldfare.
5. Turdus merula (Linn.). Blackbird.

Both common everywhere.

6. Turdus torquatus (Linn.). Ring Ouzel.

My only notice of this bird is from Vernet-les-Bains, where here is a specimen in the local collection before referred to.

7. Monticola cyanus (Linn.). Blue Rock Thrush.

One in Perpignan market, and a bird, probably of this species, was heard singing in a rugged mountain-gorge south of Arles (Tech valley). (See 'Ibis,' 1884, p. 369.)

8. Cinclus aquaticus (Bechst.). Dipper.
9. Cinclus albicollis (Vieill.). Pale-backed Dipper.

On most streams in the neighbourhood of Vernet and on the Tech river Dippers were noticed, in the former locality in very considerable numbers. Unfortunately, however, not a single specimen fell to my gun, so that nothing definite can be said as to the species. Probably both occur in the Department.

Lacroix says that *Cinclus aquaticus* inhabits the mountain-regions in summer, and the plains in winter, but the writer never observed a single example in the districts of the low country visited by him.

10. Saxicola leucura (Gmel.). Black Chat.

Met with once only in Perpignan market.

11. Pratincola rubicola (Linn.). Stonechat.

12. Ruticilla titys (Scop.). Black Redstart.

One old male bird exposed for sale in Perpignan.

13. Erithacus rubecula (Linn.). Robin.

Abundant everywhere.

14. Sylvia atricapilla (Linn.). Blackcap.

Common in Perpignan market and one shot also in the neighbourhood of Prades, west of Perpignan.

15. Sylvia melanocephala (Gm.). Sardinian Warbler.

Once seen between Amélie and Arles; another the writer watched for some time between Perpignan and the sea. In both cases these birds frequented small isolated thorn bushes on dry banks. Others appeared for sale in the market.

16. Melizophilus undatus (Bodd.). Dartford Warbler.

A bird, which was doubtless of this species, seen in the neighbourhood of Salses, a small village lying to the north of Perpignan, in close proximity to a large reedy marsh, which opens out into a lagoon nearer to the Mediterranean.

17. Regulus cristatus (Koch). Goldcrest.

18. Regulus ignicapillus (C. L. Brehm). Firecrest.

These two species appeared to abound in both the valleys. A specimen of *R. ignicapillus* was brought to me at Vernet.

19. Phylloscopus trochilus (Linn.). Willow Wren.

In Perpignan market.

20. Accentor modularis (Linn.). Hedge Sparrow.

Fairly common in the mountain regions.

21. Acredula rosea (Blyth). British Long-tailed Titmouse.

This species was very abundant in the vicinity of Vernet-les-Bains. Out of several family parties three or four specimens were obtained for identification. All these appear to be true *A. rosea—i. e.*, with distinctly vinous-coloured and not grey scapulars. Not a single example of *Acredula irbyi* came under the writer's observation in the Department; and while writing upon this subject, it may be well to state that one of the two birds shot in the Central Pyrenees and recorded as *A. irbyi* ('Zoologist,' 1884, p. 20) is probably also referable to the English form *A. rosea*.

22. Parus major (Linn.). Great Titmouse.

The most abundant species of Titmouse met with.

23. Parus ater (Linn.). European Cole Titmouse.

Noticed once only, in a small wood near to Amélie-les-Bains. Had the extensive forests lying round Mont Louis been examined, this species would doubtless have been met with more frequently.

24. Parus cæruleus (Linn.). Blue Titmouse.

Very common everywhere.

25. Certhia familiaris (Linn.). Creeper.

Fairly abundant round Vernet.

26. Tichodroma muraria (Linn.). Wall Creeper.

Not observed alive, though looked for long and carefully, but a stuffed specimen was in the local collection, shot, as the writer was informed, upon Mont Canigou.

27. Troglodytes parvulus (Koch). Wren.

Pretty generally distributed.

28. Motacilla alba (Linn.). White Wagtail.

A few on the upper waters of the Tech river, near Arles, but not once observed in the Tet valley. Frequently in the market at Perpignan.

29. Motacilla melanope (Pall.). Grey Wagtail.

Numerous in most suitable localities.

30. Anthus pratensis (Linn.). Meadow Pipit.

This bird seemed to be somewhat scarce, for only one was noticed near Amélie-les-Bains, and a few in Perpignan market.

31. Lanius meridionalis (Temm.). Southern Grey Shrike.

On January 12th a beautiful adult of this species was purchased in Perpignan, but it was the only representative of its genus that was met with, though, according to Lacroix, this bird is rather common in the Department.

32. Carduelis elegans (Steph.). Goldfinch.

Very abundant near the coast, less so inland.

33. Serinus hortulanus (Koch). Serin Finch.

Abundant.

34. Ligurinus chloris (Linn.). Greenfinch.

Perpignan market; apparently not very common.

35. Passer domesticus (Linn.). House Sparrow.

Abundant.

36. Passer montanus (Linn.). Tree Sparrow.

A few for sale in Perpignan market.

37. Petronia stulta (Gmel.). Rock Sparrow.

Narbonne market.

38. Fringilla cælebs (Linn.). Chaffinch.

By far the commonest bird in the Department during the winter. Their numbers in the plains are simply astonishing, while great quantities were also noticed among the mountains.

39. Fringilla montifringilla (Linn.). Brambling.

A small flock watched feeding in a vineyard between Perpignan and the coast.

40. Linota cannabina (Linn.). Linnet.

Very abundant in the upper Tech valley and in the low country.

41. Pyrrhula vulgaris (Naum.). Bullfinch.

This species seems to be scarce in the Department in winter. A single bird only was obtained at Vernet-les-Bains.

42. Emberiza miliaria (Linn.). Common Bunting.

Seen not unfrequently in Perpignan market.

43. Emberiza cirlus (Linn.). Cirl Bunting.

One brought in the market at Prades, the only specimen I met with.

44. Emberiza citrinella (Linn.). Yellow Bunting.

Abundant, especially in the low country.

45. Emberiza cia (Linn.). Meadow Bunting.

Very common indeed among the mountains and probably also noticed at Perpignan.

46. Emberiza schœniclus (Linn.). Reed Bunting.

Frequently to be seen in Perpignan and in the marshes bordering the sea near the little village of Salses before mentioned. Scores might be seen among the reeds, in fact they were the only birds actually observed in the marsh.

47. Alauda cristata (Linn.). Crested Lark.

Fairly abundant in the vineyards bordering the coast, and very partial to the highroads, but never noticed far inland.

48. Alauda arvensis (Linn.). Sky Lark.

Very abundant, especially in the vineyards near to the coast. Vast numbers exposed for sale in all the markets.

49. Alauda arborea (Linn.). Wood Lark.

The writer fell in with a small party of these birds on a barren hill-side near to the Spanish frontier, at an elevation of not less than 3000 feet above the sea-level, south-west of Amélie-les-Bains, and shot a couple of specimens for identification.

50. Melanocorypha calandra (Linn.). Calandra Lark.

This handsome bird was frequently noticed in Perpignan market, but never satisfactorily identified on the wing.

51. Sturnus vulgaris (Linn.). Starling.

A small flock of birds seen between Perpignan and the sea probably consisted of this species.

52. Garrulus glandarius (Linn.). Jay.

Pretty abundant in the low country, resident also in the mountains.

53. Pica rustica (Scop.). Magpie.

Common everywhere. On one occasion four were noticed all together upon a ridge above Vernet.

54. Corvus corone (Linn.). Carrion Crow.
55. Corvus corax (Linn.). Raven.

Both these species were seen in the Tet and Tech valleys.

56. Gecinus viridis (Linn.). Green Woodpecker.

Two or three in Perpignan market.

57. Alcedo ispida (Linn.). Kingfisher.

One reported to me whilst at Vernet, but spoken of as "très rare"!

58. Asio otus (Linn.). Long-eared Owl.

One at Vernet which had been recently killed.

59. Bubo ignavus (Forst.). Eagle Owl.

One in the Vernet collection.

60. Athene noctua (Retz.). Little Owl.

This species was also in the same collection.

61. Buteo vulgaris (Leach). Common Buzzard.

One seen near Vernet, probably of this species.

62. Aquila chrysaetus (Linn.). Golden Eagle.

One in the Vernet collection.

63. Accipiter nisus (Linn.). Sparrow Hawk.

One near Amélie.

64. Falco tinnunculus (Linn.). Kestrel.

Abundant in the Tet valley, also seen in the neighbourhood of Perpignan.

65. Anser, sp.

A Goose was noticed exposed for sale in Amélie-les-Bains, but not satisfactorily identified, though it possibly may have been *A. segetum.*

66. Anas boscas (Linn.). Wild Duck.

The only specimens seen were brought into Perpignan market.

67. Querquedula crecca (Linn.). Teal.

Apparently the commonest Duck in the Department, judging from the numbers brought into the different markets.

68. Mareca penelope (Linn.). Wigeon.

Frequently brought into Perpignan market.

69. Columba palumbus (Linn.). Ring Dove.

Plentiful in Perpignan market.

70. Caccabis rufa (Linn.). Red-legged Partridge.

71. Perdix cinerea (Linn.). Partridge.

The former species was abundant, but of the latter one example only was observed in the market at Perpignan.

72. Rallus aquaticus (Linn.). Water Rail.

Two or three exposed for sale in Perpignan.

73. Gallinula chloropus (Linn.). Moorhen.

74. Fulica atra (Linn.). Coot.

Both of these species appeared in Perpignan market.

75. Œdicnemus scolopax (Gmel.). Stone Curlew.

On January 18th a beautiful specimen appeared in Perpignan market, and two more the following morning.

76. Charadrius pluvialis (Linn.). Golden Plover.

77. Vanellus vulgaris (Bechst.). Peewit.

Golden Plover were frequently exposed for sale in Perpignan, and two or three parties of Peewits noted near to Rivesaltes.

78. Scolopax rusticula (Linn.). Woodcock.

79. Gallinago cælestis (Frenzel). Common Snipe.

80. Gallinago gallinula (Linn.). Jack Snipe.

The Woodcock was remarkably abundant throughout the Department, and commonly exposed for sale. The Common and Jack Snipe were seen in Perpignan market, the former in considerable numbers.

81. Totanus ochropus (Linn.). Green Sandpiper.

Purchased in the flesh in Perpignan.

82. Larus canus (Linn.). Common Gull.

A flock of what was believed to be this species observed between Narbonne and Salses.

V.—*Notes on Woodpeckers.*—No. XIII. *On* Gecinus gorii, *and on the male of* Poliopicus ellioti. By Edward Hargitt, F.Z.S.

The object of this short paper is to draw the attention of naturalists to some interesting Woodpeckers which have recently come under my notice, the first being a species of *Gecinus* from Southern Afghanistan, the other bird being the male of the rare *Poliopicus ellioti* from the Congo. A skin of the above-mentioned *Gecinus* has been brought to this country by Brigade-Surgeon Aitchison, naturalist with the Afghan Delimitation Commission, the bird having been shot by Captain Gore, R.E., on the 26th of October, 1884, at Paddá Sultan, on the Helmund. The species is allied to *G. squamatus,* but differs from it in several important characters, which I give in my diagnosis. The nature of the country in which the present bird was found appears to be totally different from that inhabited by the true *G. squamatus.* Dr. Aitchison informs me that the only indigenous trees are *Populus euphratica* and *Tamarix articulata*; these grow in the bed of the river, with numerous small tamarisks and reeds—the high banks being arid in the extreme, and bare of any thing in the way of vegetation except salsolaceous scrub. This was the only species of Woodpecker procured by Dr. Aitchison, and, unfortunately, the specimen of which I am treating has been much injured about the head and neck by water. It was carefully examined by Dr. Aitchison, and proved to be a male, which one would expect, as it possesses the red head which characterizes the male of *G. squamatus,* and the same facial characters are to be traced even in its imperfect state. Upon examining the *Gecini* in the Hume Collection, I found a female of the present species which had been procured at Quetta (*cf.* Swinhoe, Ibis, 1882, p. 102) by Dr. Duke. It resembles the Paddá-Sultan bird in every respect, except that, being a female, it has the black crown, occiput, and nape belonging to that sex. I subjoin a brief diagnosis of the species, and, at Dr. Aitchison's request, I have named it after Capt. Gore, from whom he received the specimen.

GECINUS GORII, sp. n.

Gecinus squamatus, Swinhoe, Ibis, 1882, p. 102 (nec Vigors).

G. similis *G. squamato,* sed suprà dilutius viridis; tectricibus alarum et scapularibus saturatiore viridi transfasciatis; plumis corporis inferioris squamosi lineâ nigrâ intramarginali tenui ornatis; caudæ fasciis transversis albis latis, fasciis nigris angustioribus (his in *G. squamato* latissimis, illis vero angustioribus).

Hab. In Afghania meridionali.

This is a desert form of *G. squamatus,* distinguished by the following characters :—Above very pale green, the wing-coverts and scapularies barred with a darker green; the squamate markings on the underparts reduced to a thread-like intermarginal line; the light bars on the quills as broad as, or even broader than, the black interspaces; the tail creamy white, narrowly barred with brownish black, these bars showing but faintly on the under surface, which is strongly washed with golden yellow.

Female. Similar to the male, but with the sexual distinction of the black crown, occiput, and nape.

In the British Museum there is a female specimen of a *Gecinus* from Chughur Bala, Kaffirstan (*Griffiths*), obtained in March 1839, which I refer to *G. squamatus*, but it shows a slight tendency towards some of the characteristic points possessed by *G. gorii.*

The second species which I have to mention in this paper is one I think likely to possess a great interest for students of African birds. When my paper "On the Woodpeckers of the Ethiopian Region" appeared in 'The Ibis' in 1883, the rare African species *Poliopicus ellioti* of Cassin was known to science only from the female example procured by M. Du Chaillu on the river Muni, Western Africa, and contained in the Academy Museum of Philadelphia. Not having seen the type, I was uncertain whether its generic characters allied it to *Dendropicus* or to *Campothera,* and I placed it between these two genera. An examination of a male bird, which I have recently received from the Congo district, inclines me to think I was right in so doing. The generic characters are distinct, but they are more those of *Dendropicus* than of *Campothera,* and, judging by the plumage of the bird, one would infer that such would be the case. The male of this interesting species (of which I am the fortunate possessor) is evidently a fully adult bird, and was obtained by M. Lucan, at Landana, in November 1882. Its diagnosis is as follows :—

♂. Feminæ similis, sed pileo postico et occipite vividè scarlatinis.

VI.—*A List of the Birds of Portugal.*

By William C. Tait, Oporto.

During the year 1883 I commenced the publication of a "List of the Birds of Portugal," in the Portuguese magazine, 'Jornal da Sociedade d'Instruçaõ do Porto.' After a few consecutive numbers of this periodical had appeared, its publication was temporarily suspended, but it is about to reappear. However, I have resolved to publish my list in the English language also, in case any of our British ornithologists may feel interested in the observations on the birds of this country, many of which are probably British migrants.

Very little has hitherto been published on the ornithology of Portugal, and, indeed, few people have, so far as I am aware, studied it. In 1862, Dr. Barboza du Bocage published a catalogue of the Portuguese birds then existing in the Lisbon Museum. Dr. Albino Giraldes also published a list of those in the Coimbra Museum; and the Rev. A. C. Smith contributed to this Journal (Ibis, 1868, pp. 428–460) a "Sketch of the Birds of Portugal," in which he enumerated 193 species.

Since these lists were printed, the knowledge of the ornithology of this country has increased, and many species which were then thought to be rare have since proved to be common, at least in suitable localities or at some special season of the year; other forms have been differentiated, such as *Sitta cæsia, Acredula irbii,* &c. Unfortunately, however, the number of lovers of ornithology in Portugal has continued very small, and, so far as I know, there are at the present moment only two field-ornithologists in this country, my valued friend, Dr. José Maria Rosa de Carvalho, of Coimbra, and myself. We have for many years had a very pleasant occasional correspondence on our favourite hobby, and to him I am indebted for many particulars in this list, more especially as regards the birds observed by him in the neighbourhood of Coimbra and the popular names by which they are known there.

Of late years many of my friends, learning that I was collecting observations on birds, have kindly sent me specimens, with dates and localities where obtained while out shooting. This has proved of much assistance to me in fixing the dates of arrival of many of the larger and rarer autumn migrants.

Although the fauna of Portugal is, as would naturally be expected, almost identical with that of Spain, and much resembles that of Italy, there are nevertheless some special points of interest in this country. It forms the extreme westerly point of Europe, and many of its birds differ widely from those of the east of Europe; it has a long line of coast washed by the Atlantic, favourable for observations on sea-birds, some of which perhaps are not met with in the Mediterranean; it is also one of the great highways for the migration of birds to Africa and back again. Some species are merely regular summer or winter residents.

Numerous observations on what has been called the "Mystery of Mysteries," the migration of birds, are much required from all countries. Colonel Irby made some excellent notes on the birds of Southern Spain during his stay at Gibraltar, and gave them in his book, 'The Ornithology of the Straits of Gibraltar;' and these, I believe, are the only ones which have been published on the migration of the birds of Spain. What renders Portuguese ornithology more especially interesting is the great current of migrants which passes every autumn along the coast of Portugal from north to south, and again in spring from south to north. There are also arrivals on the coast as winter approaches of birds which appear to come from the mountains of the interior of Spain and Portugal, as, for instance, the Wood Lark, Southern Grey Shrike, and Dartford Warbler; this latter species has been thought to be one of those which do not wander, but there is no doubt that it is partly migratory in this country.

The most superficial observer cannot avoid noticing the passage southwards of flocks of Turtle Doves, Tree Pipits, and Hoopoes during the month of September, followed by that of Wood Pigeons, Sky Larks, Meadow Pipits, Golden Plover, Lapwings, Stone Plover, &c.

A remarkable circumstance is that many of the species of birds which pass in such thousands in the autumn from north to south do not appear to return by the same route in the spring. It is known that they appear in the south of Spain in the spring, but they do not seem to return northwards by the coast of Portugal; whether they pass further inland I cannot say. It does not, however, appear probable that marsh-birds, at all events, would take the route across the inland Serras.

In the spring months I have repeatedly and in vain searched for the Aquatic, Sedge, Grasshopper, and Blue-throated Warblers in those marshy localities along the sea-coast where they were so common and certain to be found during their autumn migration. Even the Whinchat deserts us till the following autumn. Col. Irby mentions the departure of the Whinchat in September, and its return to Gibraltar in the spring. It would be interesting to trace it on its way back to the north of Europe by a route different to that by which it came.

The sea-birds and Waders and a few land species return north along the coast.

Graminivorous birds, Goldfinches, Linnets, Serin Finches, and Greenfinches, many of which are found here all the year round, and of which larger numbers than are generally supposed migrate south during the autumn months, return northwards through Portugal in the spring; yet they take a rather more inland line than they do when migrating southwards. This is well known to the bird-catchers.

Palmén mentions that in a few localities it has been remarked that certain birds appear only in the autumn ('Zugstrassen der Vögel,' pp. 18, 28, and 37), and attempts to account for this in a manner not satisfactory to my mind, when his arguments are applied to marsh-birds. On the west side of the Iberian peninsula it is only along the coast that suitable resting-places for these birds are to be met with, and in these we should expect to meet with our autumn visitors during the spring also, but they do not appear.

A parallel case is that of a bird frequenting mossy meadows, Ray's Wagtail, which passes down the coast of Portugal during the autumn, taking the place of the southern form, the Grey-headed Yellow Wagtail. In the spring the latter returns, but only on one occasion have I seen a Ray's Wagtail in the spring. This would be a more likely bird to pass inland than the Grasshopper and Aquatic Warblers; I suspect, however, that they pass up the east coast of Spain in the spring to reach their northern summer stations.

When one stands on the Portuguese coast on a favourable autumn morning, while an easterly land-breeze is blowing, and watches flock after flock of migrating birds pass flying due south, steadily on, a curious feeling of wonder creeps over you. From what countries do they come, and to what countries are they going? We know that many of them cross the Straits of Gibraltar to the African coast. How far down that coast do they go?

Some of the later arrivals spend the winter with us (for instance, the Pied Wagtails, Rooks, Lapwings, Sky Larks, and Meadow Pipits), disappearing in the spring. The land-birds usually migrate from about half an hour after sunrise until 9 o'clock in the morning, after which hour they saunter along or feed in the fields and woods.

Most of the species of migrating Portuguese birds have been watched by me on the move southwards:—Swallows, Swifts, Sky Larks, Tree Pipits, Meadow Pipits, Turtle Doves, Willow Wrens, Wood Pigeons, Lapwings, Terns, Gulls, Ducks, Sandpipers, and others too numerous to mention. The largest migration of sea-birds which I ever witnessed was during a somewhat foggy morning, on which occasion I noticed, among others, Gannets, Terns, Gulls, Ducks, and Waders. It is usual with the latter to migrate chiefly during the night. I have heard the notes of thousands of Sandpipers passing overhead at night, and have recognized the notes of several, such as the Dunlin, Turnstone, Redshank, and Whimbrel, more especially during foggy weather, when they call constantly to each other. I have seen the Whimbrel returning north in large flocks in the spring during the daytime.

No observations on the migration of birds on the coast of Portugal seem to have been published hitherto. Palmén, in his 'Zugstrassen der Vögel' (the migration-roads followed by birds), gives on his map the coast of Portugal as one of them, and in this he is right; yet he seems to have possessed very few data regarding this route, and these concerning only two species on the north coast of Spain, and none on the coast of Portugal.

On the 18th April, 1884, when on a visit to the south of Portugal with Dr. Hans Gadow and Mr. Scott B. Wilson, I shot two specimens of a very dark-plumaged Sky Lark on the summit of the Foja peak, Serra de Monchique, in the extreme south-west of Portugal. Being surprised to find Sky Larks in Portugal at this time of the year, as they are all gone from the neighbourhood of Oporto by the end of March, and remarking that my two Foja specimens were of darker plumage than those seen near Oporto during the winter, it struck me that the Foja Sky Larks might belong to a southern form of this species, either resident or spending only the summer there. My two specimens were unfortunately lost through the carelessness of a porter; but as this Lark was afterwards found on the Serra do Roxo, near Coimbra, I obtained a specimen of a young bird and sent it to England. Mr. Howard Saunders reports that a darker specimen has been received from Rügen, Baltic, and there is no ground for making it a new species. I draw attention to this bird, as it appears to me quite possible that the southern Sky Larks may vary considerably from the northern form, and that those Sky Larks which are found in winter in the fields near Oporto may not remain in Portugal during the summer, but migrate north to France, England, Germany, &c. They appear to me lighter in colour, but I have not had the opportunity of examining more than two adult specimens and one young one of the darker form. It is possible that as winter comes on the northern dwellers may move a few degrees south, taking the place of a more southern group of the same species, which has also moved still further south about the same time. We know that this obtains with individuals of different species. It appears to me probable that it may occur with individuals of the same species. This is a subject worthy of attention, and it is only by the close study of the migrations of geographical varieties that it can be settled.

My notes on the migration of birds in Portugal began systematically in 1878, and since that time I have made many thousands of notes, which are condensed in this list. They have supplied an interest to my walks during my leisure hours. Had I possessed more time at my disposal, they might have been more complete; but it is useless to expect absolute accuracy, they must go for what they may be worth.

I believe it has been noticed by American ornithologists that towards the southern limits of a species the reproductive powers of birds become weakened; and, so far as I have been able to ascertain, this seems to hold good in Portugal. The Missel Thrush and the Hedge Sparrow, which breed in this country, their southern summer limit in the west of Europe, appear to me to lay fewer eggs in Portugal than they do in England. I have mostly found only three eggs in their nests in Portugal, and of the Hedge Sparrow I have only once found a nest with five eggs. To be able to draw a reliable conclusion on this point, it would be necessary to keep for some years a record of the number of eggs in each nest found and repeatedly visited, allowing the bird to sit, of course, to ensure that the nest shall have its full complement of eggs, and to compare the record with a similar one kept in a more northern country.

During my rambles in the various provinces of Portugal, it has been my constant care to obtain the correct local names of the commoner birds of each locality. My long residence in this country and intimate knowledge of the language have, I believe, enabled me to overcome many difficulties and to avoid errors arising from the country people giving the same name to different species in different localities, and occasionally giving the wrong name to myself, for some of the country people are not acquainted with the names of the birds in their own district. In this they are not singular—although, as a rule, the country people of Portugal have a very fair acquaintance with the commoner birds, and can distinguish them by popular names. Many of these are onomatopœic (*i. e.* derive their origin from the notes uttered by the birds), such as "Pim-pim" (Chaffinch, neighbourhood of Oporto). Many bear traces of Latin origin —"Arvella" (Wagtail, Aveiro): some are almost identical with the Latin—"Merula" (Blackbird, province of Algarve), "Tordo" (Thrush, all over Portugal). Some are possibly from the Moorish, as "Boita" (Fan-tailed Warbler, Aveiro), "Bou-fesito" at Tangiers (see Col. Irby's 'Ornithology of the Straits of Gibraltar'), "Bibes" (Lapwing, Algarve and Alemtejo), "Beebét" at Casa Blanca on the coast of Morocco. Some are taken from a distinguishing mark, as the crest-plume of the Lapwing ("Gallispo," near Oporto: Latin *Gallus*, a cock). Others are from their habits, "Pica-pau," lit. "the Woodpecker"; or from their favourite food, "Papa-amoras," the Whitethroat, lit. "blackberry-eater." Others may puzzle philologists to trace their origin. One can understand why the largest species of Woodpecker is called "real," or royal, but why is the smallest called "gallego"? This same diminutive is given to other species, such as Jack Snipe "Narceja gallega," the Short-toed Lark "Calhandra gallega," the Little Bittern "Touro gallego," &c. Galicia is one of the northern provinces of Spain, from which come many servants and porters to earn their living in Portugal, and are a very useful and industrious class. Being hewers of wood and drawers of water, the Portuguese have acquired the habit of looking down on them, and "gallego" is here a term of inferiority. It may have been in this sense applied to the smaller species when there is more than one nearly allied. Where a bird is of specially bright plumage it is sometimes called "Francez" (French) or "Da India" (from India). The peasants may have learned to connect high ornamentation with those two countries, with which Portugal has had commerce for many centuries.

I must apologize for many shortcomings in this list. My leisure has been very limited; there are here no specimens for comparison with my own; there are very few reference-books on natural history in the Public Library, especially on ornithology. I take this opportunity of acknowledging the kind and ready assistance of Professor Alfred Newton, of Cambridge, who has been good enough to write me very full particulars in reply to my queries on various points.

The classification which I have followed in this list is that given in Dresser's list of European birds, but in a very few instances I have ventured to add a third name on the trinomial system. I find it much against the grain to give names of specific weight to closely allied races.

A List of Birds observed in Portugal, with Special Reference to those met with in the neighbourhood of Oporto.

1. Turdus viscivorus. "Tordeia," Oporto; "Tordeira," "Tordoveia," Coimbra.

Abundant, at all events in the north of Portugal, where it breeds. It is found also in the extreme south, on the Serra de Monchique, and I have met with it at Abrantes. Dr. José Maria Rosa de Carvalho informs me that it is common near Coimbra. I have received eggs from the Beira. I have generally found only three eggs in the nests of this species in Portugal. In the year 1878, I saw one bird at the mouth of the river Douro, which commenced to sing as early as Dec. 3rd.

2. Turdus musicus. "Tordo," Oporto and Portugal generally; "Tordo branco," Coimbra.

This bird arrives in Portugal in the beginning of October, passes the winter here, and is sometimes met with as late as the end of March or even the beginning of April, being most abundant during its passage south in November. When it arrives in Portugal, the grapes are already gathered, and therefore it does not damage the vineyards, as it is reported to do in France. It is very fond of the small Portuguese olives, and probably assists in the dispersal of the seeds of small stone-fruits. When on passage, the birds usually travel singly, in pairs, or in small flocks. It has not yet been known to breed in Portugal. I have looked for it without success during summer in the northern Serra do Gerez, which would be the most likely place if it lingered anywhere in this country.

3. TURDUS ILIACUS. "Tordo," Oporto; "Tordo ruivo," Coimbra; "Tordo pisco," Penafiel.

Arrives a little later than *T. musicus*, and is almost as abundant in winter, departing in January and February.

4. TURDUS PILARIS. "Tordeia," Oporto; "Tordo tornal," Coimbra.

Rather common during severe winters, and arrives later than *T. musicus* and *T. iliacus*.

5. TURDUS MERULA (Linn.). "Melro," general name in Portugal; "Merula," Algarve; "Merlo," Galicia.

Very abundant all over Portugal and resident. In the beginning of February it makes a noise like that of striking two pebbles together, and shortly afterwards begins to sing, continuing till the end of July. I fancy that those in the extreme south of Portugal have a shriller song than those in the north. This species does not recommence song in the autumn as most other birds do. Albino and pied varieties have been met with here.

6. TURDUS TORQUATUS. "Melro de papo branco."

I have seen a few specimens obtained in Portugal, but with no note of the dates on which obtained. It is probable that they arrive from the north in October. Penafiel, near Oporto, is one of the localities where it has appeared. On March 14th of this year, my brother Alfred saw one on the mountain-side near Pinheiro, which is near Braga.

7. MONTICOLA SAXATILIS (Linn.). "Macuco," Melres; "Melro das rochas," Coimbra.

Common on the Abitureira cliffs near Melres, Pinhão, and other rocky localities along the river Douro, where it breeds. Of the two specimens in the Coimbra Museum, one was obtained from the Serra do Zorro; one was shot in May, and the other in July. Migratory, sings perched on a rock, or on wing when flying from one rock to another, shivering with its wings, as is usual with birds when they sing on the wing. Its song is pleasing and melodious.

8. MONTICOLA CYANUS (Linn.). "Merifela," Pinhão; "Melro fragoeiro," Douro; "Melro lapeiro," Caldas de Aregos; "Melro azul," Coimbra; "Solitario," Alemtejo and Algarve.

Common on the rocky banks of the river Douro, above Melres. I have seen a specimen obtained at Villa Real; and it is met with at Coimbra, where, according to Dr. José Maria Rosa de Carvalho, it is not very common. In April of 1884, I saw two of these birds on the banks of the river Guadiana. Resident.

9. CINCLUS AQUATICUS. "Melro peixeiro," general name; "Melro do rio," river Minho.

Common and resident on the rivers and streams in mountainous localities, especially in the north of Portugal. It appears on some of the tributaries of the Mondego, and on this latter river east of Coimbra. The young follow the parent for some time, and it is interesting to see the latter dropping from a boulder into the water, to reappear very soon with an insect for its expectant young.

10. SAXICOLA ŒNANTHE (Linn.). "Tanjarro," Peniche; "Caiada," "Rabo branco," Coimbra and Estremadura.

I have met with this species from May till the 17th October on rocks near the sea-shore, as at Lavadoz (southern side of the mouth of the Douro), Peniche, &c.; also on the mountainous serras, in stony and desolate places. Rare near Coimbra. Summer migrant.

11. SAXICOLA ALBICOLLIS, Vieill. "Tanj-asno," Algarve; "Coelva," Abrantes.

So far as I am aware, this species has not been met with in the north of Portugal; at all events, it is not found near Oporto or Coimbra. There are specimens in the Lisbon Museum from Penamacor and Barranhos, and I saw and obtained specimens in the Algarve, where it prefers the plains, and is often to be seen perched on the fig-trees. It is a conspicuous and handsome bird, and has a somewhat pleasing and short song. I have also seen it near Abrantes. Summer migrant.

12. Saxicola rufa (C. L. Brehm). "Caiada," "Queijeira," "Tanjarra" (Coimbra); "Tanjarro," Tras os Montes and Peniche; "Tange-asno," Alemtejo; "Chasco branco," Melres.

Commoner in the southern half of Portugal than in the northern localities and heaths. Summer migrant.

13. Saxicola leucura (Gm.). "Rabo branco," Pinhão (Alto Douro); "Chasco de leque," Melres.

Common on the rocky banks of the Douro; for instance, on the Abitureira cliffs, Bateiras, &c. It may sometimes be seen perched on the roof of a wine-lagar, where the grapes are pressed and the wine fermented. It was thought that it did not exist near Coimbra until one was shot on the Serra do Zorro. I have seen it nowhere but on the river Douro. Its song is lively and pleasing. The local name of "Ave de leque," or fan-bird, is derived from its habit of spreading out the tail-feathers like a fan. It is the only species of *Saxicola* resident in Portugal.

14. Pratincola rubetra (Linn.). "Chasco," "Tange-asno," Coimbra.

Appears near Oporto on passage from the second week of September till nearly the end of October, and is common during this migration. The earliest date on which I have seen this bird is the 9th Sept. (1883), and the 19th Oct. (1879) the latest. The migration lasts about a month. It is fond of perching on the top of the dry Indian-corn stalks. The popular name at Coimbra, "Tange-asno" (gee-up, donkey!) originates from its note, like that used by the donkey-boys to urge on their beasts. It is also applied to other Chats with similar note and to the Woodchat.

15. Pratincola rubicola. "Chas-chas," Redondela, Galicia, Spain; "Chasco," north of Portugal; "Cartaxo," southwards.

The educated classes pronounce the *c* soft in "Chasco," and the hard pronunciation of the *c* by the peasants is probably archaic, the name being no doubt onomatopœic. It is interesting to observe the sharp boundaries of the two very distinct popular names of this bird. I have not been able to discover the origin of the southern name "Cartaxo;" but its northern coast-limit (Angeja, near Aveiro) curiously enough coincides more or less with the southern name of the White Wagtail, which at Angeja takes the name of "Arvella," from the Latin *arvum*. The most northern inland locality is Caldas de Aregos, where "Cartaxo" is sometimes used.

This species is very abundant all over the country, settling on the stone walls, top of the furze bushes, on the telegraph-wires, or some other elevation. The pairs seem inseparable, and it is a tame, fearless bird. This Chat is one of the earliest to nest.

The country people have a superstition that this is a "peçonhenta" or excommunicated bird, and upon inquiry they told me that it was the bird which led Judas to where Christ was to be found. In Galicia the country people say that while leading Judas, the Stonechat cried (in Gallego dialect!) "Chas, chas, por aquí bem bas" ("This is the way"); but the Chaffinch tried to lead in a contrary direction by crying "Pim, pim, por aquí bem vim" ("Come this way"). The Chaffinch is therefore looked on with more favour.

16. Ruticilla phœnicurus (Linn.). "Rabeta," Coimbra.

The Coimbra Museum contains some specimens, and Dr. Carvalho informs me that this bird usually appears in the neighbourhood of that city in September on passage, and disappears during October, being scarcer in some years than in others.

17. Ruticilla titys (Scop.). "Pisco ferreiro," Oporto; "Injá," Melres; "Raboruivo," Penafiel, Peniche; "Negrone," "Noite negra," Vigo; "Ferreiro," Coimbra.

This rock-loving-bird is of general distribution in stony places; it is also found in towns, where it makes its nest in holes in walls, or under the roofs. I often hear its clear short song from the tops of the houses as I pass along the streets Oporto. It begins to sing from the middle to the end of February, and continues till the end of June. After the autumn moult it recommences its song in September and goes on till nearly the end of December. I met with it in two of the most westerly parts of Europe, namely the Berlengas Islands on the west coast of Portugal, and the Cies Islands at the entrance to Vigo Bay, Galicia.

18. CYANECULA WOLFI (C. L. Brehm).

Appears abundantly in August, September, and October, on migration, frequenting low bushes and skulking in damp meadows near water. It is sometimes seen in gardens. The earliest date noted was August 10th; the latest, October 17th, on the banks of the creek, Leça de Palmeira near Oporto. I have never seen this species on the spring migration, although I have repeatedly looked for it in the places where it was sure to be found in autumn.

19. ERITHACUS RUBECULA (Linn.). "Pisco."

This species is very abundant all through the year in this country, more so in the north than in the south, the former being more wooded and having a greater rainfall. Like its relative the Bluebreast this bird evidently likes a leafy shade and a dampish situation. Although by no means shy it is not so familiar here as it is in England during winter, for as no snow falls except on the serras, it can always find some food for itself. It nests early and it has been known to breed in mild winters: for instance, on the 22nd Oct., 1880, Dr. Carvalho wrote me from Coimbra that a pair were building a nest in the Cellas church, entering through a broken pane in a window. That month was very mild. On the 4th of January, 1884, a friend informed me that he had seen a fledgeling in his garden opposite Oporto.

20. DAULIAS LUSCINIA (Linn.). "Rouxinol," Portugal; "Ruiseñor," Galicia.

Arrives in April and remains till the autumn. Scarce in the immediate neighbourhood of Oporto. Very abundant in the provinces of Minho, Douro, and Beira. I am not aware that the Northern Nightingale, *Daulias philomela* (Bechst.), has been found in this country.

21. SYLVIA RUFA. "Papa-amoras," literally berry-eater, Oporto; "Charrasca," Melres; "Cheldra," Esmoriz.

Abundant and generally distributed. Generally arrives at Oporto about the 8th April, and I have met with it in March. Its disappearance in October coincides with that of the blackberries, of which it is gluttonously fond, and it is probable that many blackberry-plants are dispersed by seeds dropped by this bird. In the neighbourhood of Santa Clara a Velha and S. Martinho das Amoreiras, I met with a variety with a darker head and brighter colours than the usual form of the northern part of Portugal. Prof. Newton, to whom I sent a specimen, reported that he had never seen so bright-coloured a specimen of this species.

NOTE.—I am almost certain that I have seen *Sylvia curruca* near Oporto. There is a specimen in the Coimbra Museum obtained in 1878 at Majorca. As it occurs in winter and spring in Andalucia (Irby, Saunders), it is probable that it will be found in Portugal on migration.

22. SYLVIA SUBALPINA (Bonelli).

Dr. Carvalho informs me that in the Coimbra Museum there is a specimen obtained in August at Bragança.

23. SYLVIA CONSPICILLATA (Marm.).

The Lisbon Museum possesses two specimens, one of which was obtained from Arrabida.

24. SYLVIA MELANOCEPHALA (Gm.). "Tutinegra dos Vallados," Coimbra; "Fura-Moita," Verride.

Very common on the banks of the Mondego, also at Abrantes, and appears to be pretty generally distributed in the south of Portugal. I believe I saw this skulking species near Oporto on the 10th of June and the 23rd of December, 1883, and it is probably resident in this country all the year round, as it is in some parts of Spain. Many were seen by me at Abrantes in November, but I have not seen it north of Oporto.

25. Sylvia orphea, Temm.

I have not met with this species in the north of Portugal, but it is found near Lisbon, and abundantly in the Pinhal da Quarteira, near Albufeira, Algarve, in June. Its song is very loud for the size of the bird, and is a combination of the Wood Lark's with that of the Blackcap. This, like the Sardinian Warbler, is one of the birds of the southern half of Portugal; it does not seem, however, to be at all common near Coimbra. I have seen this bird in the Alemtejo.

26. Sylvia atricapilla (Linn.). "Tutinegra" for "Touta-negra," *i. e.* "black-poll."

This species is abundant and resident, frequenting gardens and wooded country. Its song may be heard all through the year except in November, December, and January, being most vigorous in spring and fainter in July and August, during which months the bird moults.

27. Sylvia salicaria (Linn.).

I found a nest of the Garden Warbler, with three fresh eggs (June 9th, 1882), on the Ilha do Conguêdo, near Valença, on the river Minho, obtaining the bird, and others were seen in the bushes. At Angeja, near Aveiro, and in the grounds of the Zoological Gardens at Lisbon, I again met with it in summer. Near Oporto I have only seen it in the months of August, September, and October, when large numbers appear in the orchards and gardens. They are very fond of figs, elder-berries, and other fruit.

28. Melizophilus undatus (Bodd.). "Cheide," Jou, Traz-os-Montes; "Felosa preta," Penafiel; "Rozinha," Vianna do Castello.

The Dartford Warbler is found in Portugal all the year round, but there is no doubt that it is at least partially migratory. The mouth of the Douro, for instance, is a locality where it is not found in summer, but appears about the 10th of October, remaining until the beginning or middle of

February. It does not entirely avoid the sea-coast in summer, for I saw a bird and nest on the 4th June, 1882, on Cies Island, Vigo Bay. This species likes the heather and gorse on upland moors and serras; and I have occasionally seen small flocks in winter, when the snow and cold on the serras probably drives them down to the valleys and sea-coast. I have met with this species also in the Serra do Gerez, Beira, Estremadura, Ribatejo, Alemtejo, and Algarve, on heaths.

29. REGULUS CRISTATUS (Koch). "Estrellinha," "Felosa de Touta," Penafiel.

Appears in winter in small flocks.

A variety, *Regulus cristatus maderensis,* is found in Madeira.

30. REGULUS IGNICAPILLUS.

The Fire-crest, which bears the same local names as the above, appears in winter generally in pairs. Colonel Irby says that this bird breeds near Gibraltar; there is therefore a chance of finding it in this country in summer, at which season, however, I have not yet met with it.

31. PHYLLOSCOPUS COLLYBITA (Vieill.). "Foloso," Oporto; "Firafolha," Anchora; "Ferifolha," Jou, Tras os Montes; "Feloca," Ovar; "Furifolha," Estoi, Algarve; "Filosa," Redondela, Galicia, Spain.

Resident and abundant, nesting in the gorse and brambles about a foot from the ground. More numerous in the autumn. Sings from the first week in February till nearly the end of August, and recommences in November for a short time.

32. PHYLLOSCOPUS TROCHILUS (Linn.). "Folosa."

Appears in August and September on passage. I am not aware that this species breeds in Portugal; but as Colonel Irby says it has been known to breed in the south of Spain, it may perhaps be found in summer in this country also.

33. PHYLLOSCOPUS SIBILATRIX (Bechst.). "Folosa."

There is one specimen in the Lisbon Museum, obtained at Barranhos.

34. PHYLLOSCOPUS BONELLII (Vieill.).

There is a specimen in the Coimbra Museum, and Dr. Carvalho tells me it appears in that neighbourhood in autumn.

35. HYPOLAIS POLYGLOTTA (Vieill.). "Folosa," "Floria," Oporto.

Common. Arrives in the spring and goes away in the autumn. Builds in bushes, about a yard or two from the ground, an open nest lightly and neatly made of stalks of grass. It is specially fond of broom thickets.

I have not met with the Icterine Warbler, but I am not surprised to see that it has been met with in Spain during spring and autumn, as I considered it a northern form and should have expected it only at those seasons.

36. AEDON GALACTODES (Temm.).

I have seen this bird in the scrub near Abrantes and also near Tavira in the Algarve. I have not met with it in the north of Portugal.

37. ACROCEPHALUS STREPERUS (Vieill.). "Rouxinol pequeno das caniças," Ovar.

Abundant in the reeds in marshy places such as Ovar, Esmoriz, and Estarreja. Arrives in the spring, nests in May and June; in August it appears in the hedges and orchards on passage, and is seen till nearly the end of October.

38. ACROCEPHALUS ARUNDINACEUS (L.). "Rouxinol grande das caniças," Ovar; "Ferreiro," Murtoza; "Pinta-ró-ró," Vagos, near Aveiro.

Abundant in the tall reeds in large marshes such as those at Ovar, Estarreja, Angeja, and Aveiro, but is not found during the winter months. It is a giant edition of *A. streperus,* frequenting larger reeds, over deeper water, singing a louder song and having a heavier flight. Its song, *karra-karra-karra, karree-karree-karree, charra-charra-charra,* rings loud and clear far over the marshes, and occasionally the bird can be seen flitting from one clump of reeds to another, where it plunges into the thickest parts, clinging to the reeds sideways or perching near the bending top. Its nest is beautifully made of stalks of dry grass artistically woven together to a cup-shape, and suspended against three or more tall reeds where they stand thickly together.

39. ACROCEPHALUS AQUATICUS (Gmel.).

This species is common on the old salt-pans at Mattosinhos, near Oporto, in the second week of August, and is to be found there till about the third week in October. I have found it also in the water-meadows near the Castello do Queijo, but only in the autumn, although I have frequently looked for it there in the winter, spring, and summer.

40. ACROCEPHALUS SCHŒNOBÆNUS (L.).

This species is also found near Mattosinhos on the banks of the Leça creek, where it frequents the reeds, while *A. aquaticus* prefers the rushes. It occurs in August and September on passage, and I saw two near Abrantes on November 5th, 1882.

41. LOCUSTELLA NÆVIA (Bodd.).

Appears on passage in September and October in company with *A. aquaticus* and frequents somewhat similar situations, but is fonder of the ditch-sides. Dr. Carvalho informs me that this species is common on the alluvial plains on the sides of the Mondego below Coimbra in September and part of October, and that he saw one once in January. I have never met with it near Oporto except in the autumn.

42. LOCUSTELLA LUSCINIOIDES (Savi).

Dr. Carvalho, who is my authority for this species, informs me that he once met with it in the S. Fagundo marsh, near Coimbra, where he saw the old bird and young. I have looked for it in vain in the large marshes near Aveiro and in the Algarve.

43. CETTIA CETTI (Marmora). "Rouxinol bravo."

A few birds appear every year in the bushes on the edges of streams near the sea about Castello do Queijo, near Oporto, and remain there from October till March; the species is therefore somewhat migratory. I found it very abundant on the banks of the Mondego, near Coimbra, in

October, and Dr. Carvalho tells me it is met with there all the year round, and nests in the bushes. It sings throughout the year, and it is somewhat startling in winter to hear a loud and abrupt burst of song resembling that of the Nightingale from a thick bush close to one.

44. CISTICOLA CURSITANS (Frankl.). "Boita," Aveiro; "Fuinha," "Fuim," Estoi, Algarve; "Cochicha," Ovar; "Chincha folle," Vagos; "Bentoinha," Santa Clara a Velha, Alemtejo.

Abundant in rushes and long rank grass on edges of marshes or marshy streams near the seaside. Its note is a very distinct, shrill, monosyllabic *tzit-tzit-tzit*, and may be heard when the bird is so far off as to be scarcely visible. It is fond of flying about in circles with festoon curves, uttering its note at each ascending curve.

At Ovar and Estarreja it is very abundant, and at Mattosinhos it is common and nests on the salt-pans and banks of the creek. It generally arrives at the Foz do Douro (mouth of the Douro) about the 20th of March, and disappears at the end of August or middle of September, a stray bird or two sometimes remaining till the end of October. I have never seen it near Oporto in winter. Dr. Carvalho informs me that at Coimbra it is found all the year round, moving in winter to the higher ground of the rye-fields. Near Abrantes I have met with it in winter as well as summer.

It is both an early and late nester: on the 8th April, 1880, I saw a nest with young birds, and on the 20th July, 1879, I found one still building, and two days afterwards I met with another nest with newly hatched young and some eggs. On the 17th July, 1881, a nest which I found contained three fresh eggs.

The nest, a most remarkable structure, cocoon-shaped, and looking as though made of floss silk, is generally attached to stalks or leaves of long rank grass about a foot or two off the ground; the opening is at the top, narrow and well-concealed. In fact one might at first sight mistake this nest for a mass of spider-web and pass it by. As remarked by

Mr. Howard Saunders, the eggs are very variable. One nest contained three eggs with light greenish-blue ground, one of them without, and two with purple spots. Another clutch consisted of four much larger eggs, white ground with purplish-red spots of two shades and small blotches. These would probably be the pink eggs mentioned as having been met with by some writers, for when fresh they would appear transparent and rosy. They are rather larger than some eggs which I have of the Crested Titmouse (a larger bird), but in coloration and markings they much resemble the latter.

This species was first described by Temminck from skins brought from Portugal by Link and Hoffmannsegg.

45. ACCENTOR MODULARIS. "Negrinha," Oporto and Esmoriz; "Pretinha," Leça de Palmeira.

Resident. Common in the north of Portugal and very abundant about the mouth of the Douro, where I have found nests and eggs. This appears to be about the southern limit for this species in Portugal. Dr. Carvalho tells me that it is rarely met with near Coimbra, and Col. Irby mentions that at Gibraltar it is seldom seen and only in winter. Those nests which I have seen in this country have usually contained about three eggs, a smaller complement than is usual in England.

[To be continued.]

VII.—*On an apparently undescribed Hawk of the Asturine Subgenus* Urospizias, *proposed to be called* Urospizias jardinei. By J. H. GURNEY.

(Plate III.)

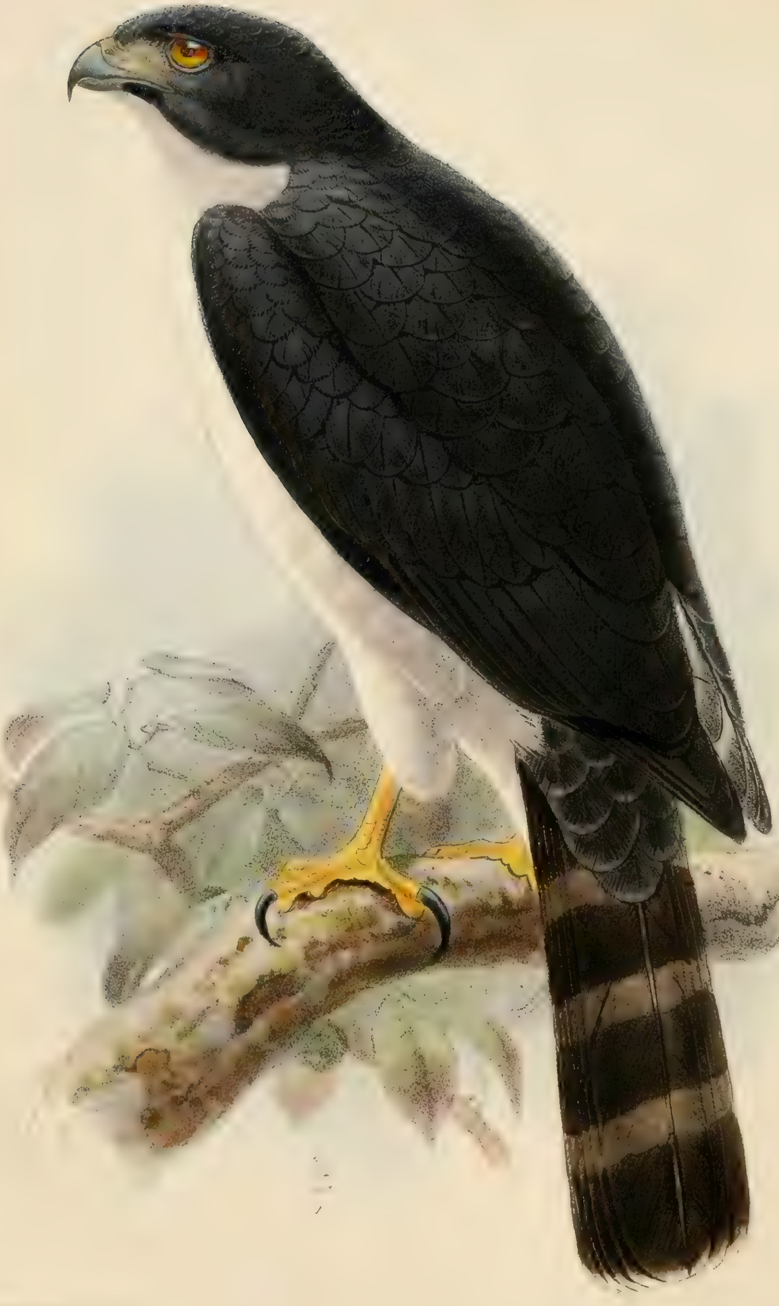
AMONGST the Raptorial specimens which were acquired for the Norwich Museum at the recent sale of the collection of the late Sir William Jardine is a Hawk which bears a ticket with the following inscription :—

"ASTUR POLIOCEPHALUS.

Hab. }
Auth. } Uncertain—a—284."

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK,
NATURAL HISTORY.

Ibis 1887. Pl. III.



J. G. Keulemans lith.

Hanhart imp.

UROSPIZIAS JARDINEI.

The bird is certainly not *Astur poliocephalus* of Gray, and much more nearly resembles an adult of the white-breasted phase of *Urospizias albigularis*; it is, however, quite distinct, as will appear by the measurements given below, in which I have compared it with an adult specimen (a female, as I believe) of *Urospizias albigularis,* as well as by certain differences of coloration, which I will also specify.

Before proceeding further in my comparison of the two species it may be convenient to mention that I propose to call the new one *Urospizias jardinei,* in commemoration of the collection from which it passed into that of the Norwich Museum.

The following are the comparative measurements, taken in inches and tenths:—

	Wing.	First primary.	Tail.	Tarsus.	Middle toe, *s.u.*
U. jardinei	11·0	6·0	7·80	2·20	1·65
U. albigularis ..	10·0	4·20	7·20	2·50	1·60

Although *U. jardinei* is somewhat the larger bird of the two, it is remarkable that it has a shorter tarsus; and a further evidence of its specific distinctness exists in the greater proportionate length of its first primary.

U. jardinei, like *U. albigularis,* is white on the under and black on the upper surface, where, however, there is some difference of hue, owing to the bird having been killed whilst moulting; the new feathers in the mantle being of a full black colour, whilst the older part of the upper plumage is black slightly tinged with brown. But although the coloration of *U. jardinei* bears this general resemblance to that of *U. albigularis,* the following differences exist between the two species: the cheeks and ear-coverts are a decided black in *U. jardinei,* instead of being a dark lead-colour as in *U. albigularis,* and the dark colour extends somewhat lower down, with the result of the white portion of the throat being perceptibly narrower in *U. jardinei* than in *U. albigularis.*

In both species the inner webs of the primaries are white cross-barred with blackish brown, but in *U. jardinei* the cross-bars are less narrow than in *U. albigularis* and are not placed so closely together; they also extend beyond the notch in the inner web, which the corresponding bars in *U. albigularis* do not reach.

In *U. jardinei* the flank-feathers, axillaries, and under wing-coverts, instead of being a pure white, as in *U. albigularis*, are tinted, though but very faintly, with grey, and many of these feathers also exhibit darker shaft-marks of a hair-like fineness.

The most striking peculiarity of plumage in *U. jardinei* is, however, to be found in the tail, which, in addition to a slight whitish tip, is crossed on the upper surface by four, and on the under by five, transverse whitish bands, which are entirely wanting in *U. albigularis*; these bands, on the upper surface of the tail, are about 0·4 of an inch in depth, the uppermost band being a decided, though not a pure, white, the lowest whitish brown, and the two that are intermediate in position being also intermediate in hue; all the bands are, however, more conspicuously white on the outer than on the central rectrices, and more so on the under than on the upper surface of the tail. I may add that the fifth white bar on the underside of the tail is placed higher up than the four bands which are common to both surfaces.

It is much to be regretted that the habitat of *Urospizias jardinei* must, for the present, remain unknown; but, if I am correct in referring this species to the subgenus *Urospizias*, its home will probably be found somewhere in the great Australasian Oceanic Region, which is the home of its congeners; and it is hoped that the figure which accompanies this article may assist in the identification of future specimens, should any such come to light.

VIII.—*On the Breeding-plumage of* Podiceps occidentalis, *Lawrence.* By H. B. Tristram, D.D., F.R.S.

At the sale of Sir W. Jardine's collection I became the possessor of a specimen of *Podiceps occidentalis*, Lawrence, labelled in Sir William's handwriting "*Podiceps leucopterus*, King, ♀, Vancouver's Island, coll. Mr. Brown." The bird was in full nuptial dress. I saw at once that it differed from *Podiceps major* (Bodd.), Pl. Enl. 404, admirably figured by Jardine and Selby (Ill. Orn. pl. 107) under the name o *P. leucopterus,* King. Of this bird I have a specimen in breeding-plumage obtained by Mr. Bridges in Chili. It is impossible on comparing the two birds to confuse them, and I can only suppose that Sir W. Jardine labelled his specimen without comparison; and indeed his own collection does not appear to have contained a South-American specimen of *P. major.*

The breeding-plumage of *P. occidentalis* appears to be quite unknown; at least I can find no description of it in the latest North-American works on the subject*. They do but repeat the remark of Prof. Baird :—"It is fair to infer that in its nuptial attire it makes a grand display. In this plumage its acquisition is very desirable" (Baird's Birds, p. 894). Both the North- and South-American species are representatives rather of *P. griseigena* than of *P. cristatus.* My specimen from Vancouver Island agrees in measurements with Baird's Puget Sound specimen. The cheeks, throat, and ear-coverts are silvery white, the forehead and occiput are glossy green-black, forming an elongated massive crest, behind which the white of the throat extends in a narrow line, forming a narrow collar only interrupted in the centre of the back of the neck. The line of the white throat is sharply defined, and the front and sides of the neck are a rich chestnut, becoming gradually paler as it blends with the silvery white breast and abdomen. The nuptial dress of *P. occidentalis,* it will be seen from this description, differs from that of its southern congener, *P. major,* which has the throat dark ashy grey, becoming almost black as it approaches the chestnut of the neck; while *P. griseigena* has the throat light ashy grey bordered with white. The crest or ruff of the northern bird is also decidedly larger and thicker than that of either of its congeners.

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* [We would suggest a reference to 'The Water-Birds of North America,' by Messrs. Baird, Brewer, and Ridgway, vol. ii. p. 422 (Boston, 1884).—Edd.]

IX.—*On the Bullfinches of Siberia and Japan.*

By Henry Seebohm.

In 1871 (Journ. f. Orn. p. 318) Cabanis described a new species of Bullfinch from Lake Baikal; in 1872 (Journ. f. Orn. p. 316) he named it *Pyrrhula cineracea*, and in 1874 (Journ. f. Orn. pl. i.) he figured the male and female. There is a great deal of white on the wing-bar of this bird, but the cheeks and ear-coverts are very grey. In 1876 Mr. Dresser, in his 'Birds of Europe' (iv. p. 100), devoted a paragraph to the new species, containing a brief diagnosis and a survey of its range. He appears to have examined several skins—one from Dauria, which he informs us was in his own collection, and several, which he states were from Japan, in the Swinhoe collection. There are, however, no skins of this species in the Swinhoe collection from Japan, nor has any collector obtained it from any of the Japanese islands! Mr. Dresser's further statement that the Japanese skins "are as a rule a little more dull in general coloration than those from Siberia," though not strictly accurate if applied to the four females of *Pyrrhula rosacea* from Yesso in the Swinhoe collection, is evidently intended to apply to them. Compared with females of *P. cineracea* they are not "as a rule" but *invariably*, not "a little more" but *very much* browner both on the upper and underparts. The statement that "the male resembles the female, but is much clearer grey on the upper as well as on the underparts" also favours the assumption that the remarks apply to females of *P. rosacea*, as true females of *P. cineracea* are scarcely less grey than males on the upper parts, but are absolutely brown, instead of grey, on the underparts. The assertion that the female of *P. cineracea* "very closely resembles the female of *Pyrrhula major*, differing only in having the outer web of the innermost primary (no doubt a misprint for secondary) grey and not red," somewhat increases the difficulty. In the first place the females of *P. major* are as often without the red as with it; and in the second place females of *P. major* are almost always distinguishable from females of *P. cineracea* by the much greater amount of brown on their mantles, and generally from females of *P. rosacea* by the much less amount. Under all circumstances we may, however, erase the species *P. cineracea* from the list of Japanese birds.

Pyrrhula rosacea appears to be a good species, confined to the island of Yesso and the opposite coast of the mainland, whilst *P. orientalis* is found only on the other Japanese islands. Mr. Sharpe has separated the Kurile Island birds as *P. kurilensis*. They are unquestionably much paler, but further investigation is almost sure to lead to the discovery of intermediate forms, and I have not the least doubt that both species will be ultimately reduced to the rank of subspecies, and will stand as *Pyrrhula orientalis rosacea* and *Pyrrhula orientalis kurilensis* respectively.

If the same rules be applied to *P. cineracea*, it must also be divided into two forms. The typical form from Dauria (Krasnoyarsk, Lake Baikal, and Onon River) has a great deal of white on the wing-bar, and none on the sides of the head. Examples from the Altai Mountains and from the valley of the Ussuri, on the other hand, have the wing-bar grey, the sides of the head almost white, and are paler on the underparts generally. I propose to call the extreme eastern form *Pyrrhula cineracea pallida*, as it differs quite as much from its more western ally as *P. kurilensis* does from *P. orientalis*. In the same way I propose to reduce *P. kamtschatica* to the rank of a subspecies, and to call it *P. vulgaris kamtschatica*; it differs from the typical form in being somewhat paler in colour, and in having more white on the wing-bar.

The Black-headed Bullfinches vary very much, probably because they are only gipsy migrants and have wide ranges. *P. vulgaris* in some form or other ranges from the Atlantic to the Pacific, from the British Islands to Kamtschatka. In the west it reigns supreme, except that the colony on the Azores is recognized by all ornithologists as an independent nation claiming full specific rank as *P. murina*. In the east it has two rivals to contend with, *P. orientalis* and *P. cineracea*. The former has a very restricted range, the three forms into which it is subdivided being almost confined to the Japanese Islands, the Kurile Islands, and the Island of Askold, opposite Vladivostok. To the mainland it is doubtful whether it be more than an occasional visitor. Dybowski obtained a single example in the upper valley of the Ussuri (Journ. f. Orn. 1876, p. 200), and the Abbé David says (Ois. de la Chine, p. 349) that during the whole of his residence in Pekin he only saw three or four examples. Middendorff unquestionably obtained one example of *P. orientalis rosacea* on the island of Udskoi in the most westerly bay of the Sea of Okhotsk; but that it was paired with a female of *P. vulgaris major*, as he states, is *very* questionable. Schrenck found both species (*P. rosacea* and *P. major*) in the lower valley of the Amoor; but Radde failed to find either *P. rosacea* or its subspecific ally *P. orientalis*, so that we may safely assume it to be rare in that locality. It is remarkable that whilst *P. vulgaris* is found as far south as Asia Minor on the west, its eastern form has not occurred further south than lat. 48° in the Ussuri valley. In this valley all three species occur. I have an example of *P. cineracea pallida* (the type) from lat. 48° in the Ussuri valley, and one of *P. orientalis* was obtained by Dybowski (as already mentioned) in lat. 43°.

P. cineracea (either in the paler or darker form) has a wide range. Severtzow obtained it at Vernoe (he gave me a female from that locality) in long. 67° in Russian Turkestan, and my Ussuri example was collected in long. 135°. Prjevalski did not find any Black-headed Bullfinch in Mongolia; but Severtzow gave me a skin of *P. cineracea* from the Mongolian slopes of the Altai Mountains, though Tancré's collectors failed to find it there. It belongs to the pale form, though it is somewhat intermediate.

This geographical distribution of *Pyrrhula* presents one or two very interesting features. The genus consists of eight good species, four of which are confined to the Himalayan range from Gilgit and Cashmir to Sikkim and the mountains of Eastern Thibet, and are distinguished by not having black heads. The subspecies are climatic forms, and present in nearly every case the usual variation produced by the heavy rainfall of Western Europe and the bright cold climate of

Siberia, the extreme of which is reached as usual in Kamtschatka. The one exception to these rules of variation is that *P. orientalis* of the southern islands of Japan, which are almost tropical, is a greyer, whiter bird than *P. orientalis rosacea* of the north island of Japan and the opposite coast, which are almost arctic. There can be little doubt that *P. orientalis* was originally isolated and differentiated in Japan; but it seems highly probable that the north island was subsequently invaded by a large colony of *P. major* before differentiation had proceeded far enough to make fertile interbreeding impossible. If we regard *P. rosacea* as the result of an ancient cross between the ancestors of *P. major* and *P. orientalis*, all difficulties as to the peculiarities of its coloration will disappear.

X.—*Notices of Recent Ornithological Publications.*

1. *Beckham on the Ruby-crowned Kinglet.*

[Remarks upon the Plumage of *Regulus calendula.* By Charles Wickliffe Beckham. Proc. U.S. Nat. Mus. viii. pp. 625–628.]

The author reviews the conflicting statements of various writers respecting the asserted presence of the brightly coloured crown-patch in females and young autumnal birds. He concludes that the female does not have this brightly coloured crown, but that some, and perhaps a majority, of the young autumnal males exhibit this ornament.

2. *Berlepsch on the Literature of the Trochilidæ.*

[Kritische Bemerkungen zur Colibri-Literatur. Von Hans von Berlepsch. Festschr. d. Ver. f. Naturkunde zu Cassel, 1886.]

In this unpretending essay, which must have cost the author much time and trouble, will be found an excellent account of the whole literature of the Trochilidæ from their first discovery (1535–47) to the present time. The full titles of the numerous works referred to are carefully given in footnotes. Graf v. Berlepsch considers that 450 well-definable species and some 50 or 60 subspecies of Trochilidæ are now known. The largest special collection of this group is that of John Gould, now in the British Museum (5378 examples); the two next, probably, those of Salvin and Godman and of Mr. D. G. Elliot; and the fourth in extent that of the author (about 2000 examples of 350 species and 30 subspecies).

3. *W. Blasius on the Birds of Celebes.*

[Beiträge zur Kenntniss der Vogelfauna von Celebes. II. Von Prof. Dr. Wilh. Blasius. Zeitschr. f. d. ges. Ornithologie, 1886, Heft ii.]

In this memoir Dr. W. Blasius gives a full account of a collection formed in Minahassa, Northern Celebes, by Mr. Riedel in 1865 and 1867, and presented in 1866 to the Ducal Museum in Brunswick, of which he had previously given a preliminary notice. The species treated of are 80 in number, on which many excellent critical remarks and comparisons are given. The only species new to Celebes is *Terekia cinerea*, but it is not quite certain that the specimen of it belongs to this collection. Had the series been worked out at the time of its arrival in Europe it is obvious that it would at that epoch have contained many novelties since described from other sources.

4. *Büttikofer on Birds from the Tenimber Islands.*

[On a Collection of Birds from the Tenimber Islands. By J. Büttikofer. Notes Leyden Mus. viii. p. 58.]

In 1883 Mr. Riedel, the Resident at Amboina, presented to the Leyden Museum a collection of 35 birds from the Tenimber or Timor-Laut group of islands. Mr. Büttikofer refers them to 31 species and gives us some interesting notes on them. *Erythromyias riedeli* is a new species, and *Ardea picata* and *Fregata minor* are new to the fauna. It seems that the White Cockatoo of the Tenimber Islands, which Sclater (P. Z. S. 1883, p. 197) referred to *Cacatua sanguinea*, is rather smaller in size, and is exactly the same as the type of *C. goffini*, Finsch, in the Leyden Museum. *Erythromyias riedeli* is nicely figured, and *E. pyrrhonota* of Timor is represented as a companion figure.

5. *Büttikofer on a new* Pericrocotus.

[On a new Species of *Pericrocotus* from Sumbawa. By J. Büttikofer. Notes Leyden Mus. viii. p. 155.]

The species is described and figured as *P. lansbergii*, from Sumbawa. It belongs to the section of *P. peregrinus* and *P. igneus*.

6. *Dubois on Birds collected by Capt. Storms in the Tanganyka District.*

[Liste des Oiseaux recueillis par M. le Capitaine Ém. Storms dans la région du Lac Tanganyka. (1882–1884.) Par M. Alph. Dubois. Bull. Mus. Roy. d'Hist. Nat. de Belgique, iv. (1886).]

This is a nominal list of 205 species, of which specimens are contained in the collection made by Captain Storms. Dr. Hartlaub has described the new species (*v. inf.* p. 109).

7. *Ferrari-Perez on Mexican Birds.*

[Catalogue of Animals collected by the Geographical and Exploring Commission of the Republic of Mexico. By Fernando Ferrari-Perez. Proc. U.S. Nat. Mus. 1886, p. 125.]

It will be news to most of our readers that the Mexican Government has appointed a Geographical and Exploring Commission. Such, however, seems to have been the case as long ago as 1877, when a Commission was constituted, consisting of a Director (Mr. Agustin Dias, C.E.) and four engineers as assistants. The original object of this body was to prepare a general map of the Republic; but astronomical, geodetic, and topographical branches were subsequently added, and for this purpose the strength of the Commission was increased to fifty members. Finally, a natural history division, of which the first object was to investigate the geology of the country, was appended. The first collections of natural history formed by the natural history division were shipped to New York in 1884, in order to have the objects determined and exhibited in the Exposition at New Orleans. These first collections were lost in transit by the burning of the vessel in which they were placed. Much to the credit of the Commission, however, this unfortunate accident was not allowed to interfere with the scheme, and other collections were formed during the winter of 1884–85, and sent to New Orleans in time to take their place in the Exhibition of 1885. Since then these collections have been transmitted to Washington to be determined by comparison with the specimens in the U.S. National Museum, and the report upon them is now published. The birds enumerated in the present list by Mr. Ferrari-Perez are 241 in number, chiefly from the States of Puebla, Tlaxcala, and Vera Cruz. The supposed novelties have been already described by Mr. Ridgway in 'The Auk' for 1886 (*Amphispiza ferrari-perezi*, *Pipilo submaculatus*, *P. complexus*, *Anas diazi*, and *Philortyx personatus*). But see Mr. Salvin's views (*infra*, p. 108) as to the three Fringillidæ. Mr. Ridgway now further characterizes the *Micrathene* of Socorro as distinct, under the name *M. graysoni*. The occurrence of *Micrathene whitneyi* and *Anthus spraguii* so far south as the State of Puebla is now first recorded.

8. *Fischer and Pelzeln on the Birds of Jan Mayen.*

[Vögel und Säugethiere von Jan Mayen, gesammelt von Dr. F. Fischer, bearbeitet von Dr. F. Fischer und August von Pelzeln. Die Internat. Polarforschung 1882–83. Die Oesterreichische Polarstation Jan Mayen. Bd. iii. 1886.]

Those who have not the geography of the Arctic regions at their fingers' ends may like to be reminded that Jan Mayen is a long narrow island of volcanic formation, situated near the edge of the ice-pack which fringes the east coast of Greenland, rather more than a third of the way between the north-east of Iceland and the south of Spitsbergen. It is often sighted and sometimes visited by the Dundee and Peterhead whalers and sealers, as well as by yachting explorers; but the first description of its avifauna was published by Herr Mohn, in his account of the Norwegian Arctic Expedition (Christiania, 1882), in which a brief list of only seven species was given. The Austrian expedition passed a year on this desolate island, exploring the interior as well as the coast, and the result is that Dr. Fischer has given us a catalogue of no less than 46 species, many of them of great interest, owing to this extension in their previously known range. Such, for instance, are *Erithacus rubecula, Turdus pilaris, T. musicus, T. merula, Anthus aquaticus**, and *A. arboreus,* none of which have hitherto, we believe, been found in Greenland or Iceland, and certainly not in Spitsbergen. The Great Northern Diver is said to breed on Jan Mayen, in which there are two large freshwater lagoons; but it would be interesting to know whether the bird obtained was the true *Colymbus glacialis,* or the presumably circumpolar *C. adamsi.* The remarks on the variation in the dimensions of Brünnich's Guillemot would carry more weight if the plate given in illustration did not seem to indicate that one of the supposed Guillemots was really a young Razorbill! No very rare waders or sea-birds appear to breed on Jan Mayen, and even *Pagophila eburnea* and *Xema sabinii* are only known as visitors. On the whole this is a paper of unusual interest.

9. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[Biologia Centrali-Americana; or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Parts XXXV.–LI. 4to. London: 1885–86. Published for the Editors by R. H. Porter, 10 Chandos Street, Cavendish Square, W.]

Considerable progress has been made with this important work since we gave our last notice of it (Ibis, 1885, p. 227), seventeen more Parts having been issued. Of these the sheets and plates relating to the Birds are contained in numbers xliii., xlvi., xlviii., l., and li. The letterpress (pp. 345–416) continues the history of the numerous Fringillidæ of Central America down to *Spiza,* a term which has lately been revived to supersede *Euspiza.*

Hæmophila lawrencii is a new name for *H. ruficauda,* Lawr., of the Tehuantepec district. Mr. Salvin refers the recently described *Amphispiza ferrari-perezi*, Ridgway, to *Hæmophila humeralis*, and the same author's *Pipileo complexus* to *P. macronyx*, and his *P. submaculatus* to *P. maculatus*. The following species are figured :—*Cyanospiza rositæ, Junco alticola, Zonotrichia vulcani, Haplospiza uniformis, Zonotrichia quinquestriata, Spizella pinetorum, Peucæa notosticta, Ammodromus petenicus, Hæmophila humeralis, H. rufescens, H. superciliosa,* and *H. ruficauda*.

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* [We do not think that the author's *Anthus aquaticus* is the Water Pipit, *A. spipoletta,* Linn., nor can we determine from the description and references whether the species obtained was *A. obscurus* or *A. ludovicianus*; the latter has occurred in Greenland.—Edd.]

10. *Gould's 'Birds of New Guinea.'*

[The Birds of New Guinea and the adjacent Papuan Islands, including any new Species that may be discovered in Australia. By [the late] John Gould, F.R.S. &c. Parts XXI., XXII. Folio. London: 1886.]

The two Parts of the 'Birds of New Guinea' published in 1886 contain figures of the following species :—

PART XXI.

Erythrotriorchis doriæ.
Drepanornis bruijnii.
Eos fuscata.
Ægotheles wallacii.
Meliarchus sclateri.
Stigmatops kebirensis.
—— squamata.
Xanthotis chrysotis.
Rhipidura rubrofrontata.
Pachycephala collaris.
Calornis feadensis.
Dicæum pectorale.
Pseudogerygone notata.

PART XXII.

Astur melanochlamys.
Ninox dimorpha.
Psittacella madaraszi.
Ceyx gentiana.
Edoliisoma poliopse.
Rhipidura hyperythra.
Melanopyrrhus anais.
Melanopyrrhus orientalis.
Amblyornis subalaris.
Melirrhophetes batesi.
Megapodius brenchleyi.
Pseudogerygone chrysogastra.
—— cinereiceps.

Melirrhophetes batesi and *Pseudogerygone cinereiceps* are recent discoveries of Mr. H. O. Forbes in the Sogeri district of New Guinea *.

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* *Cf.* Sharpe on "Mr. Forbes's expedition to New Guinea," in 'Nature,' xxxiv. p. 346 (Aug. 12, 1886), where some account is given of Mr. Forbes's collections.

We are informed that the publishers have determined to bring this great work to a termination after a few more numbers. This is much to be regretted, as only about 325 species will have been figured out of an avifauna known already to contain at least 1000 species.

11. *Hartlaub on new African Birds.*

[Description de trois nouvelles espèces d'Oiseaux rapportées des environs du Lac Tanganyka (Afrique Centrale) par le Capitaine Ém. Storms. Par le Dr. G. Hartlaub, de Brême. Bull. Mus. Roy. d'Hist. Nat. de Belgique, vol. iv., 1886.]

The new species are named *Turdus stormsi, Ploceus duboisi,* and *Lagonosticta nitidula.* All three are figured. Dr. Hartlaub adds a note on a specimen of *Monticola brevipes.*

12. *Huet on Additions to the Jardin des Plantes.*

[Note sur les naissances, dons et acquisitions de la Ménagerie du Muséum d'Histoire Naturelle pendant les mois de Mai, Juin, Juillet et Août 1885, et de Janvier, Février, Mars et Avril 1886. Par M. Huet. Bull. Soc. Nat. d'Acclim. France, 1886.]

M. Huet states that in 1885 hybrids were produced between a male *Phasianus reevesi* and a female *Ph. torquatus,* and that in 1886 the said hybrids bred *inter se.* The Silver Pheasant and a *Euplocamus,* apparently *E. leucomelanus,* have also interbred; and so have a *Euplocamus* and a Jungle-cock. Some interesting notes upon a Lyre-bird (*Menura superba*) are also given; but the other arrivals call for no particular remarks.

13. *Littleboy on the Birds of Hertfordshire.*

[Notes on Birds observed in Hertfordshire during the Year 1885. By John E. Littleboy. Trans. Hertf. Nat. Hist. Soc. vol. iv. p. 53.]

Mr. Littleboy, an active local ornithologist, read his annual report for 1885, at Watford, in April last. No species new to the lists are known to have occurred in Herts in that year, but some additions are recorded from examples preserved in the collection of Mr. A. Holland Hibbert of

Munden House, and elsewhere. These raise the number of species belonging to the Hertfordshire avifauna to 179.

14. *Meyer on some Birds from New Guinea.*

[Notiz über *Lophorina minor* (Rams.) und *Euthyrhyncha fulvigula*, Schl. Von A. B. Meyer. Zeitschr. f. d. ges. Ornithologie, 1886, p. 180.]

Dr. Meyer shows that the expanded neck-collar of *Lophorina minor*, Ramsay, has quite a different form from that of *L. superba*. He also describes the differences between the specimens of *Euthyrhyncha fulvigula* recently obtained by Hunstein in the Horseshoe Mountains of S.E. New Guinea and a typical example of the same bird from the Arfak Mountains in the north-west of that island.

15. *Milne-Edwards and Grandidier's 'Madagascar.'*

[Histoire Physique, Naturelle et Politique de Madagascar. Publiée par Alfred Grandidier. Vol. XII. Histoire Naturelle des Oiseaux. Par MM. Alph. Milne-Edwards et Alf. Grandidier. Tome I., Texte, i. 2e partie. Vol. XIV. Tome III., Atlas, ii., 2e partie. Vol. XV. Tome IV. Atlas, iii. 4to. Paris: 1881–85. Imprimerie Nationale.]

The ornithological portion of the great work on Madagascar, of which we have already spoken (Ibis, 1878, p. 180, and 1880, p. 136), is now complete. It consists of one volume of text (770 pp.) and three of plates (upwards of 300), many of the latter being devoted to osteology, anatomy, points of structure, and oology. The figures of the whole birds are drawn by Keulemans and nicely coloured.

As summarized by our authors, the avifauna of Madagascar contains 238 species. Of these there are 89 of more or less extended distribution, leaving 149 as the characteristic forms of Madagascar. Of these 149, 4 have a considerable range, 9 are of African origin, 7 Asiatic or Oceanic, and no less than 129 are absolutely restricted to the island. But the extraordinary point is, that of the genera to which these 129 species are referred, 35 are generic types unknown elsewhere. Thus we have an island with more than half the known species of its avifauna peculiar to it, and a large proportion of its genera, a fact unparallelled elsewhere on the earth's surface.

We offer our best congratulations to the authors for having brought this important and profusely illustrated work to a successful conclusion. A few novelties may still be picked up in Madagascar, but M. Grandidier's care and energy will render it very difficult to add much more to the list of species of this singular avifauna.

16. *Nathusius on the Position of the Egg in the Oviduct.*

[Besteht eine ausnahmslose Regel über die Lage der Pole des Vogeleies im Uterus im Verhältniss zur Cloakenmündung? Von W. v. Nathusius. Zool. Anz. 1885, p. 415.—Ueber die Lage des Vogeleies im Uterus. Von W. v. Nathusius. *Ibid.* p. 713.]

Is there an invariable rule as to whether the large or small end of the egg is in front in the bird's oviduct before extrusion? It would have been supposed that such a simple matter of fact would be easily ascertained. Dr. Taschenberg has asserted that the big end *always* comes out first. Herr v. Nathusius was at first of opinion that there is no definite rule on the subject; but in his second note he admits that the experiments of Dr. Ernst, of Caracas, have shown that the big end is commonly in front.

17. *Nathusius on the Egg of* Struthiolithus.

[Ueber das fossile Ei von *Struthiolithus chersonensis*, Brandt. Von W. v. Nathusius. Zool. Anz. 1886, p. 47.]

Herr v. Nathusius has examined the microscopical structure of the fossil egg described by Brandt in 1872 as *Struthiolithus chersonensis* *. His verdict is, that *Struthiolithus* was certainly a Struthionine bird and, so far as its egg is concerned, not generically separable from *Struthio*. On the other hand, *Apteryx*, as judged by its egg, has no relationship to the Struthiones.

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* Found in 1857 in an old river-bed (a so-called balka) near Malinowka in the Government of Cherson. It measured about 18 centim. in length and 15 in diameter, and is therefore considerably larger than any Ostrich's egg (Cf. Brandt, Mél. Biol. Ac. Sc. St. Pét. t. v. no. 5).

18. *Norfolk and Norwich Naturalists' Society's Transactions.*

[Norfolk and Norwich Naturalists' Society's Transactions, vol. iv. pt. ii. Norwich: 1886.]

This Part, recently issued, is peculiarly rich in papers bearing upon ornithology. The interesting Address by the late President, Major H. W. Feilden, with its skilful treatment of the distribution of Arctic species, is followed by "An Account of the Nesting of the Crossbill in Suffolk," by Mr. F. Norgate; "A Visit to a Colony of various species of Herons on the Danube," by Mr. J. Young; "Remarks on a female Redstart assuming the plumage of the male," by Mr. J. H. Gurney, jun.; "Ornithological Notes at Cley," by Messrs. G. E. and F. D. Power; "A Visit to the Isles of Scilly during the Nesting Season," by Mr. E. Bidwell; "The Habits and Plumage of the Manx Shearwater, as observed on the Island of Eigg, in the Inner Hebrides," by Rev. H. A. Macpherson; "Notes on the Fulmar Petrel in Confinement," by Mr. G. Smith; and "Notes on a Female Honey-Buzzard," by Mr. J. H. Gurney. Last, and most important, is Section I. of "The List of Norfolk Birds," by Messrs. J. H. Gurney, jun., and T. Southwell, in which 145 species are noticed, commencing with the Accipitres and ending with the Gallinæ, the arrangement followed being that of the fourth edition of Yarrell. This forms a valuable supplement to the portions of Stevenson's 'Birds of Norfolk,' which were published sixteen years ago.

19. *Oustalet on a new* Tetraophasis.

[Description de quelques Oiseaux nouveaux de la Chine et du Thibet. Par M. E. Oustalet. Le Naturaliste ,1886.]

Notwithstanding the title, only one species is actually described as new, although allusions are made to rare and interesting birds, such as *Sibia desgodinsi*, described by M. Oustalet in 1877, and others, sent from Yer-ka-lo, on the Mé-kong, by the Abbé Desgodins. In the new species, *Tetraophasis desgodinsi*, the plumage of the male differs from that of *T. obscurus* in having the rump and upper tail-coverts greyer, the throat is clear yellow and not chestnut as in the latter, and the feathers of the flanks are of a rich red-brown with tawny margins.

20. *Oustalet on Birds from Somali-land.*

[Catalogue des Oiseaux rapportés par M. G. Révoil de son deuxième voyage aux Pays des Çomalis (Afrique Orientale). Par M. E. Oustalet. Bibl. de l'École de Hautes Études, Sect. d. Sc. Nat. xxxi. no. 10 (1886).]

M. Oustalet gives an account of the collection of birds made in Somali-land by M. Georges Révoil during his second expedition to that country in 1884. It contains examples of 73 species, besides others of wide distribution. A remarkable discovery is that of a new species of the genus *Machirhamphus* (*M. revoili*), intermediate in some respects between *M. alcinus* and *M. anderssoni*. *Pyrrhulauda signata* (allied to *P. verticalis*) is also described as probably new.

21. *Pelzeln and Kohl on Birds from Ceylon.*

[Ueber eine Sendung von Säugethieren und Vögeln aus Ceylon. Von August v. Pelzeln und Franz Fr. Kohl. Verhandl. k. k. zool.-bot. Gesellsch. Wien, 1885, p. 525.]

The collection, sent to the Imperial Museum of Vienna by Herr G. Hütterolt, of Trieste, contained examples of 39 species of birds. A few observations and field-notes are added to the list of names.

22. *Ridgway on Venezuelan Birds.*

[Descriptions of some new Species of Birds, supposed to be from the interior of Venezuela. By Robert Ridgway. Proc. U. S. Nat. Mus. 1886, p. 92.]

The specimens here described are of somewhat novel origin. They are skins formerly attached to a bead-belt, supposed to have come from some portion of the Upper Orinoco region. Two species are described as new, *Pyroderus masoni* and *Aulacorhamphus dimidiatus*. Examples of a third species are referred, somewhat doubtfully, to the Mexican *Myiopsitta lineola* (Cassin). But we may remind Mr. Ridgway that if the Venezuelan bird is distinct, it has already been provided with a name by Souancé (Rev. et Mag. de Zool. 1856, p. 144), based upon specimens from Caracas.

23. *Ridgway on* Œstrelata sandwichensis.

[On *Æstrelata* [sic] *sandwichensis*, Ridgw. By Robert Ridgway. Proc. U. S. Nat. Mus. 1886, p. 95.]

Mr. Ridgway has now been able to compare the Petrel from the Sandwich Islands, which in the 'Water-birds of North America' (vol. ii. p. 395) he referred with much doubt to *Œ. hæsitata*, with an undoubted specimen of the latter species. He finds them very different, and points out the characters which confirm *Œ. sandwichensis* as distinct. It is possible, however, that the Sandwich-Island bird may be the same as *Œ. phæopygia* of Salvin, from the Galapagos.

24. *Ridgway on* Buteo latissimus.

[Description of a melanistic specimen of *Buteo latissimus*. By Robert Ridgway. Proc. U. S. Nat. Mus. 1886, p. 248.]

The description is taken from a female specimen recently acquired by the National Museum from Iowa. It "presents an exceedingly close general resemblance to the browner examples of *Buteo fuliginosus*, Scl., which is said to be the melanistic phase of *B. brachyurus*."

25. *Shufeldt on the Osteology of* Conurus.

[Osteology of *Conurus carolinensis*. By R. W. Shufeldt. Journ. Anat. & Phys. xx. p. 407, pls. x., xi.]

This is one of Dr. Shufeldt's osteological monographs, executed with his customary exactitude, and illustrated by two beautifully drawn plates. At the conclusion a useful "synopsis of the skeletal characters" is given.

26. *Smart on British Birds.*

[Birds on the British List: their Title to Enrolment considered, especially with reference to the British Ornithological [*sic*] Union's List of British Birds: with a few remarks upon 'Evolution,' and notes upon the rarer Eggs. By the Rev. Gregory Smart, M.A. 8vo. London and Preston: 1886.]

Unless this book had been sent to us for notice, we should gladly have ignored a work in which a long series of blunders commences on the very titlepage. Besides being steeped in silliness, it is often so incoherent and unintelligible in style, that it is inconceivable how any one of ordinary education could have written it. But gross inaccuracies in pretended quotations from authors whose names are given, and whose exact words are supposed to be indicated by inverted commas, are so mischievous that we cannot conscientiously leave them unexposed. Take a few refutations of Mr. Smart's misstatements. Messrs. Sterland and Whitaker do *not* say, in their 'Birds of Northamptonshire,' that *Buteo borealis* was submitted to Mr. Gould in the flesh; and Mr. Seebohm will hardly recognize the version given of his remarks on p. 10. Mr. J. H. Gurney never wrote the incoherent nonsense respecting the African Buzzard attributed to him between quotation-marks (p. 11); and Mr. Seebohm's meaning with regard to the American Hawk Owl is quite perverted by misquotation (p. 14). The Blue Rock Thrush was *not* "shot at Westmeath on Nov. 17th, 1866, by Mr. B. Knox," nor by any one else, seeing that it was brought from Cannes, in France; and Professor Newton did *not* "admit the occurrence": he recorded the assertion of the occurrence, which is a very different matter. Respecting the reported capture of the Red-eyed *Vireo* in Derbyshire, Mr. Smart says, "the only question seems to be whether the genuine occurrence is *authentic*. And upon this Professor Newton throws *no shadow of distrust*," the italics being the author's. Naturally, the cautious Professor did not commit himself to anything beyond the bare record of the existence of such a statement; but in this and similar cases we may remember Lord Burleigh's nod. Yet even Professor

Newton did not count upon being interpreted by one gifted with the power of divining intentions possessed by Mr. Smart, who remarks, on the Rustic Bunting in 'Yarrell's British Birds,' that "the article concludes with *a very significant vignette* of a young person playing with a bird which has been let out of a cage": the italics again being the author's. Respecting the [wrongly] recorded Demoiselle Crane in Somersetshire, Saunders is made to say "that it had probably escaped from confinement;" but there is not one syllable of the kind in 'Yarrell' (vol. iii. p. 192), and Mr. Smart's statement is a pure fabrication. Again (p. 68) it is asserted that Saunders says "the eggs [of the Noddy Tern] are more calcareous than, and indistinguishable [*sic*] from eggs of the Sooty Tern;" but reference to 'Yarrell,' vol. iii. p. 564, shows that the very reverse is the case, the words being "the shell [of the egg of the Sooty Tern] is smooth, in which respect it differs strikingly from the egg of the Noddy, in which the shell is of a rough calcareous nature." As regards the American Laughing Gull, Mr. Seebohm does *not* "point out that the specimen stated in the B. O. U. List to be in the British Museum is 'Ridibundus';" on the contrary, as shown by Saunders, he says that it is a nearly adult specimen of the American *L. atricilla*—the point being that it is not the identical bird said to have been obtained by Montagu at Winchelsea, and which was merely a *Larus ridibundus*. More might be said, but we think the above will suffice.

Children are sometimes encouraged to make collections of foreign postage stamps under the impression that they may thereby acquire a knowledge of geography, and we hope that the acquisition of egg-shells may in time exercise a similar beneficial effect upon Mr. Smart. He may possibly learn that "Ungarn" is merely German for a country known in English as Hungary; that "Ost Finmarken" is East Finmark; and that "Los Angelos Cala" [*sic*] means Los Angeles, California. "Torn Lapland" seems to indicate an aggression by some northern power, but we do not venture upon politics.

27. *Stejneger on Japanese Birds.*

[Review of Japanese Birds. By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1886, p. 99. I. The Woodpeckers.]

We are much pleased that Mr. Stejneger has taken up the subject of Japanese Ornithology, and intends to write a "comprehensive and reliable guide" thereto, with "ample descriptions of all the known forms, from original Japanese specimens." Such a work is much wanted at the present moment, and Captain Blakiston having given his unrivalled collection of Japanese birds to the U.S. National Museum, together with his MS. notes and catalogues relating to the same subject, there can be no question that excellent material is available for the purpose. Nor is there any doubt that Dr. Stejneger, with his accurate knowledge of the birds of both the Palæarctic and Nearctic Regions, is a proper man to undertake the task. Captain Blakiston's collection is chiefly from the northern island of Yesso, but a fine series from the central part of Hondo has been transmitted to the U.S. National Museum by Mr. P. L. Jouy, which serves to confirm the fact, already pointed out by Captain Blakiston, that the former island belongs rather to the Siberian division of the Palæarctic Region, while Hondo and the two smaller southern islands belong to China. As, however, much more of Japan remains to be explored before the exact distribution of the local forms can be adequately worked out, Dr. Stejneger proposes to commence his labours with a set of preliminary papers, which he hopes may induce his brother ornithologists to supply further materials and information. In the present essay an account is given of the Japanese Picidæ; of these one species of Wryneck and twelve Woodpeckers are recognized. Of the latter, two are named as new species, *Dryobates subcirris*, from Northern Hondo and Yesso, and *D. namiyei*, from the south-western portion of the same island, and one as a new subspecies, *Picus canus yessoensis*, from Yesso.

28. *Stejneger on the British Marsh Tit.*

[The British Marsh Tit. By Leonhard Stejneger. Proc. U. S. Nat. Mus. 1886, p. 200.]

Dr. Stejneger maintains that the British Marsh Tit is quite as distinct from the true *P. palustris* of Northern Europe as the so-called *Parus britannicus* is from *P. ater*, and proposes to make it a new subspecies, *Parus palustris dresseri*. It is "much darker" in colour: "the brown of the back more olive; the rump clearer and lighter buffish brown; flanks much browner; tail shorter." Similarly he would call the Cole Tit of Great Britain *Parus ater britannicus*.

29. *Taczanowski's 'Ornithologie du Pérou.'*

[Ornithologie du Pérou, par Ladislas Taczanowski. Tables. 8vo. Rennes: 1886. Pp. 218.]

M. Taczanowski's "Tables" greatly add to the value of his 'Ornithologie du Pérou.' The volume contains, first a set of keys for the determination of the various genera and species, and secondly an alphabetical index to the three former volumes. We congratulate M. Taczanowski on the final completion of a laborious and most useful work.

30. *Vorderman on the Birds of Western Java.*

[Bijdrage tot de Kennis van de Avifauna der Preanger Regentschappen Langs de Wijnkoopersbaai (West-Java). Door A. G. Vorderman. Natuurk. Tijdschr. v. Nederl. Indië, Dl. xlvi. Afl. 1.]

In June 1885, Mr. Vorderman paid a visit to the districts of Pelaboean and Djamperry Koelon, on the west coast of Java. After a short preliminary dissertation, in which *Rubigula dispar*, *Ixidia squamata*, *Brachypodius melanocephalus*, and *Philentoma velatum* are mentioned as characteristic forms of this district, a list is given of the 86 species met with. Many remarks and observations are added.

31. *Wells on the Birds of Grenada.*

[A List of the Birds of Grenada, West Indies. By John Grant Wells. 8vo. Grenada, W.I.: 1886.]

Mr. Wells has made 39 additions to the 54 species of birds met with by Mr. F. Ober in Grenada, and gives a nominal list of the whole of them. Specimens of most of those obtained by Mr. Wells have been sent to the Smithsonian Institution, Washington, and have been determined by Mr. Lawrence.

XI.—*Letters, Extracts, Notices, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Sirs,—I beg leave to send you a short note on the proper generic name for the Nightingales.

The following generic names have been proposed for these birds:—

Luscinia, Brehm, Isis, 1828, p. 1280.
Daulias, Boie, Isis, 1831, p. 542.
Philomela, Selby, Brit. Orn. i. p. 206 (1833).
Lusciola, Keys. & Blas. Wirbelth. Eur. p. lviii (1840).

Although *Luscinia* has the priority, still, even in one of the most recent works ('A List of British Birds, compiled by a Committee of the British Ornithologists' Union,' p. 11), the genus *Daulias*, Boie, has been used for the Nightingales, but, according to my view, not quite correctly. Both *Luscinia*, Brehm, and *Daulias*, Boie, were published by their authors without characters; but while *Luscinia* has been accepted and *characterized* by G. R. Gray, in the 'Genera of Birds,' i. p. 173, since 1848, and accepted also by Cabanis (Mus. Hein. i. p. 1) and others, *Daulias* was revived much later by Dr. Sclater ('Revised List of the Vertebrate Animals in the Gardens of the Zoological Society,' p. 126), in 1872, and first characterized nearly at the same time, or very shortly afterwards, by Prof. Newton ('Yarrell's British Birds,' i. p. 312)*. From all this it is quite evident that *Luscinia*, Brehm, established and characterized before *Daulias,* Boie, is the proper generic name to be used for the Nightingales.

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* Strickland, in 1841 (Ann. & Mag. N. H. vi. p. 422), thinking that *Luscinia* had been first used generically by Bonaparte in 1838, wrote that it "should give way to *Philomela*, Selby, 1833, unless *Daulias*,

I have heard that one reason adduced for rejecting "*Luscinia*" is that Brehm, in using that name, has attributed it to Brisson, as if he was reviving a Brissonian genus, whereas Brisson made no such genus. But I do not see any good reason in this. Brehm could not have thought that he was reviving a Brissonian genus *Luscinia,* as he must have read that Brisson puts *Luscinia* in the genus *Ficedula*; Brehm only meant that the term *Luscinia* (like *Cyanecula, Ruticilla,* and other names, *which have been generally accepted and attributed to Brehm,* even in the B.O.U. List) is to be found in Brisson. It is, however, a fact beyond any doubt that those names were used in a generic sense for the first time by Brehm, and consequently they must be attributed to him.

Yours &c.,
T. Salvadori.

Sirs,—In the notice of my article on Birds from Emperor-William's-Land, in the last number of 'The Ibis,' the locality in one passage (p. 518, line 8) is given as "Lifu." It should be "Kafu."

Begging of you to notice this *erratum,*

Yours &c.,
A. B. Meyer.

Dresden, November 1886.

The House Bunting of the Sahara and Marocco (Fringillaria saharæ).—"One very pleasing feature in Marocco is the tameness of all wild creatures. At Kaid Maclean's dinner-table there were always a number of little birds hopping about on the cloth, which at first we thought were pets of the family, till we were told they were the Sparrows of the

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Boie, be prior to the latter name;" but Strickland at that time was not aware that *Luscinia* had been used by Brehm in 1828, long before Bonaparte.

city. They picked up the crumbs under your very nose, and boldly perched on the bread and the edge of one's wine-glass, a familiarity which at times I found had its disadvantages. They are held sacred, and being thus preserved from injury are perfectly fearless and domesticated. This bird, which is called *tabib* (doctor), is quite different from the European Sparrow, being of a red-brown colour with pretty markings, about the same size, but of a less stout build. When I woke of a morning there were often one or two of these little fellows on my pillow, and others perched on the end of the bed."—*Stutfield's 'El Maghreb*: 1200 *miles' ride through Marocco,'* p. 253. [*Cf.* Tristram, Ibis, 1859, p. 295.]

Migration at Chicago.—The 'American Naturalist' of September last contains the following curious story (Am. Nat. xx. p. 818):—

"The building of the Board of Trade of Chicago has a ring of electric-arc lights around its dome, some 300 feet above the pavement. The ring is thirty feet in diameter, and contains twenty lights. They were lighted for the first time on the evening of January 1st, 1886. On the night of May 8th following, a terrific thunderstorm passed over the city between the hours of 11 P.M. and midnight. During the storm the attention of the few people who were in the street at that time was attracted to the spectacle of a great number of birds hovering about this ring of lights and dashing at them. In the morning it was discovered that hundreds of dead birds were scattered about the foot of the tower, and hundreds more were found upon the roof of the building. When the workmen ascended the tower to renew the carbons in the lights, they found many of the globes occupied by the bodies of birds, some containing as many as eight, and many of the carbons had been broken off by the birds. Over two hundred bodies were picked up by one of the workmen attached to the building, which was but a small part of those carried away by the news-boys and others in the morning. A person who saw them before any were taken away, estimated that more than a thousand were killed. But even this was but a small portion of what were seen in the air about the tower. It is to be regretted that no person competent to determine the species of the birds killed on this occasion was present when they were first observed. I understand that a few of them afterwards fell into such hands, but I have heard no report. From the testimony of those who saw them they appear to have been, for the most part, the smaller song-birds."

The Ridgway Ornithological Club.—Mr. H. K. Coale sends us the subjoined summary of the recent proceedings of the Ridgway Ornithological Club of Chicago.

Aug. 12th. Mr. George L. Toppan read a paper on "Spring Notes for Cook and Lake Counties, Ill., and Lake Co., Ind." A paper from Dr. R. W. Shufeldt, entitled "The Future of American Ornithology," was also read. Donations of skins, eggs, and ornithological literature were received from resident and corresponding members.

Sept. 9th. Mr. J. G. Parker, Jun., read a paper on the "Ornithology of Sauk and Colombia Counties, Wisconsin," illustrated with skins of the rarer species.

Oct. 14th. A paper by Robert Ridgway, entitled "List of the Birds found breeding within the corporate limits of Mount Carmel, Ill.," was read. The subject of publishing the Proceedings of the Club was discussed and favourably thought of, although definite action will not be taken until the November meeting.

Ornithological Works in Progress.—Our President, Lord Lilford, is endeavouring to gather together what little is known of the Birds of Cyprus, and is making plans for a further investigation of the avifauna of that island during the approaching spring. He would be glad, we are sure, to receive any information on this subject. It is certainly high time that steps should be taken to make us better acquainted with the natural history of this recently acquired portion of the British Empire, which, though small in area, is of great interest as regards its position.

Mr. H. H. Johnston, now H.B.M. Vice-Consul in West Africa, aided by a grant from the British Association, has already effected a preliminary survey of the summits of the Cameroons, and obtained amongst other spoils a small series of birds. We trust that it may contain, along with other rarities, additional specimens of *Strobilophaga burtoni*, of which the only known example was obtained by Sir Richard Burton when he made his ascent of the Cameroons in 1861. The presence of this arctic type in the Cameroons would lead us to expect to find there accompanying forms of like origin.

Mr. Seebohm is busily engaged on the final revision of his work on the "Geographical Distribution of the Charadriidæ, or Plovers, Sandpipers, and Snipes," which will be ready for publication about May next. It will be illustrated by twenty excellent plates of the rarer species, which have been executed by Keulemans, besides about 200 woodcuts. The same facile artist has, we believe, undertaken the preparation of the plates for Sir Walter Buller's new edition of the 'Birds of New Zealand.'

Messrs. J. A. Harvie-Brown and T. E. Buckley have in preparation a 'Vertebrate Fauna of Sutherland, Caithness, and West Cromarty,' a work based upon the authors' personal acquaintance with the larger portion of the area treated of, during a period of twenty years. It will be issued in small quarto, with a map showing the faunal areas, and plates, at a cost of 21*s*. to subscribers, who are invited to send their names in to Mr. Harvie-Brown, Dunipace House, Larbert, N.B. Up to the present the names of intending subscribers have been coming in very slowly, and unless 250 are secured, it may not be considered desirable to proceed with the work. The failure of so promising a contribution to our history of local faunas would be very regretable, and we trust that those Members of the B.O.U. who have not yet sent in their names will no longer imperil the work by delay.

Aided by a grant from the donation fund of the Royal

Society, Mr. W. H. Hudson has been able to devote much of his time lately to rewriting his excellent field-notes on the birds of the Argentine Republic, which have been published in the 'Proceedings' of the Zoological Society, the 'Field' and elsewhere. Sclater is preparing them for publication in connection with a new descriptive catalogue of the same avifauna, and proposes to publish them under the title of 'Argentine Ornithology.' They will form two octavo volumes of about the size of 'The Ibis.'

Exhibition at Ekaterinburg.—The Société Ouralienne d'Amateurs des Sciences Naturelles sends us a polite invitation to visit Ekaterinburg next summer, any time between the 15th of May and the 18th of September, in order to see the "Exposition scientifique et industrielle de la Sibérie et des Monts Ourals," in which specimens of birds and eggs will form a portion of the exhibits in Class IV. "Zoology, Zootomy, and Anatomy." The route is by railway to Nishni, steamer thence to Perm, and railway again to Ekaterinburg. Tickets will be issued at very reduced rates to those furnished with vouchers by the Committee of the Exhibition. The Committee of the B.O.U. will be glad to hear from any Member who would like to make this interesting journey.

New Birds from the West Indies.—A supplementary paper to the last number of 'The Auk,' 1866 (pp. 497 *et seqq.*), shows how much there is still to be done in the smaller islands of the West-Indian archipelago, even in the well-worked subject of ornithology. Mr. Charles B. Cory, who has for some time so successfully devoted himself to explorations in this quarter, has sent a collector to the small islands known as Grand and Little Cayman, which are situated south of Cuba and about one hundred and thirty miles north-west of Jamaica. As has recently been shown to be the case in the Island of Cozumel, off the coast of Yucatan, here also isolation has continued long enough to permit many of the birds shut off from intercourse with their parent forms to acquire differences which amount to what are usually regarded as specific. Out of about forty species of which examples were obtained by Mr. W. B. Richardson for Mr. Cory, no less than thirteen are considered to be new, and several others are stated to vary slightly from known West-Indian forms. The new species are named:—(1) *Certhiola sharpei,* (2) *Dendroica vitellina,* nearest to *D. discolor,* (3) *Chrysotis caymanensis,* next to *C. leucocephala* of Cuba, (4) *Colaptes gundlachi,* like *C. chrysocaulosus* of Cuba, (5) *Engyptila collaris,* (6) *Zenaida spadicea,* (7) *Centurus caymanensis,* (8) *Mimocichla ravida,* (9) *Quiscalus caymanensis,* (10) *Spindalis salvini,* most like *S. pretrii,* (11) *Vireo alleni,* (12) *Myiarchus denigratus,* and (13) *Icterus bairdi,* most nearly allied to *I. leucopteryx* of Jamaica. On the whole, as might have been expected, the "Avifauna Caymanensis" seems to be most nearly connected with that of Cuba. But probably the Caymans were mainly stocked with life, not by immigration, but when still part of the old continent out of which the Antilles were carved by the Gulf-stream. For this continent I suggest the name PRÆANTILLESIA. Some of the types of its ancient life we have still left in *Solenodon* and *Capromys* amongst Mammals, and *Todus, Temnotrogon,* and *Spindalis* amongst Birds.

Messrs. Godman and Salvin have also lately received a collection of birds from Ruatan and some of the other smaller islands off the coast of Yucatan, amongst which are objects of considerable interest. Of this collection, Mr. Salvin promises us an account for a future number of 'The Ibis.'—P. L. S.

'Stray Feathers.'—While two new ornithological periodicals have recently appeared on the continent of Europe (the 'Zeitschrift für die gesammte Ornithologie' and 'Ornis'), our Indian contemporary, 'Stray Feathers,' has, we fear, altogether come to an end. It was hardly to be expected, perhaps, that Mr. Hume, having presented his noble col-

lection to the British Museum, would be in a position to continue his work of editing 'Stray Feathers'; but we venture to hope that he will at least issue or permit to be issued a fourth part and index to the last unfinished volume, so that we may be able to bind it up. Thus brought to a respectable termination, 'Stray Feathers' must be regarded as a most valuable contribution to our knowledge of the Indian avifauna, and as a lasting credit to the energy of its talented Editor.

OBITUARY. *Mr. A. E. Knox.*—The British Ornithologists' Union has lost another of its original members by the death of ARTHUR EDWARD KNOX, which occurred on the 23rd of September last at Dale Park, near Arundel. Born in Dublin, the 28th of December, 1808, the deceased gentleman was the eldest son of the late Mr. John Knox of Castlerea, in the county of Mayo (who died in 1861), the descendant of a branch of the Scottish family of that name which had settled in Ireland early in the seventeenth century*. Being the heir of a large and, as it was then believed, a flourishing property, our late fellow-member entered Brazenose College in the University of Oxford, where he graduated M.A., and obtained a commission in the Second Regiment of Life-Guards, from which he retired about the time of his marriage, in 1835, with Lady Jane Parsons, daughter of the second Earl of Rosse, and therefore sister to the constructor of the famous telescope. Mr. Knox soon after took up his abode at Pagham, on the coast of Sussex, and there began that course of observations on the birds of that county, the results of which have appeared in his two best-known works. A few years later he removed to New Grove near Petworth, subsequently to St. Ann's Hill, Midhurst, and, about 1860, to Trotton House near Petersfield, which he occupied until quite recently. For some time after leaving the army, the expectations to which he had been born gradually dwindled, and finally the terrible famine of 1845 reduced him, like so many others dependent upon Irish landed property, almost to penury. In the endurance of poverty he found much solace through the outdoor study of natural history; and at length, by means of the Encumbered Estates Act, prosperity again dawned upon him, but at the cost of parting with the family possessions. His first published notes appeared in 'The Zoologist' for 1843; and, in 1849, he brought out his 'Ornithological Rambles in Sussex: with a Systematic Catalogue of the Birds of that County'—the precursor of so many works of similar local scope, few of which, however, have equalled it as regards personal experience, while none have surpassed it in spirit. A favourable notice, by his friend and country-neighbour, the late Bishop Wilberforce, in the 'Quarterly Review,' not only helped the sale of this little book, so that a second and a third edition appeared in 1850 and 1855 respectively, but encouraged the immediate publication of another—'Game Birds and Wild Fowl'—of no less merit, though herein the author shows more of the sportsman than the ornithologist. A scientific ornithologist, indeed, Mr. Knox never professed to be; but, so far from being one of the many popular writers who because they know not science affect to despise its teachings, he held it in the utmost respect; and in the dark November days of 1858, when the most sanguine were at times in doubt whether the required score of members of the B.O.U. would ever be found, he readily threw in his lot, took the greatest interest in the project, and contributed, as all know, a pleasantly written little paper to the first volume of this Journal (Ibis, 1859, pp. 395–397). Mr. Knox's last work was 'Autumns on the Spey,' published in 1872, and its frontispiece will give to those who knew him not some idea of his personal appearance, though to them no conception can be conveyed of his genial nature, his fund of humour, and his varied accomplishments—among which mention may be made of his power as a draughtsman, though this may be judged of by the plates to the now rare original edition of his first work. His collection of birds, formed almost entirely in Sussex, he gave, on breaking up his establishment at Trotton, to his long-attached frienc the Duke of Richmond and Gordon, to be preserved at Goodwood House, where it is now lodged.

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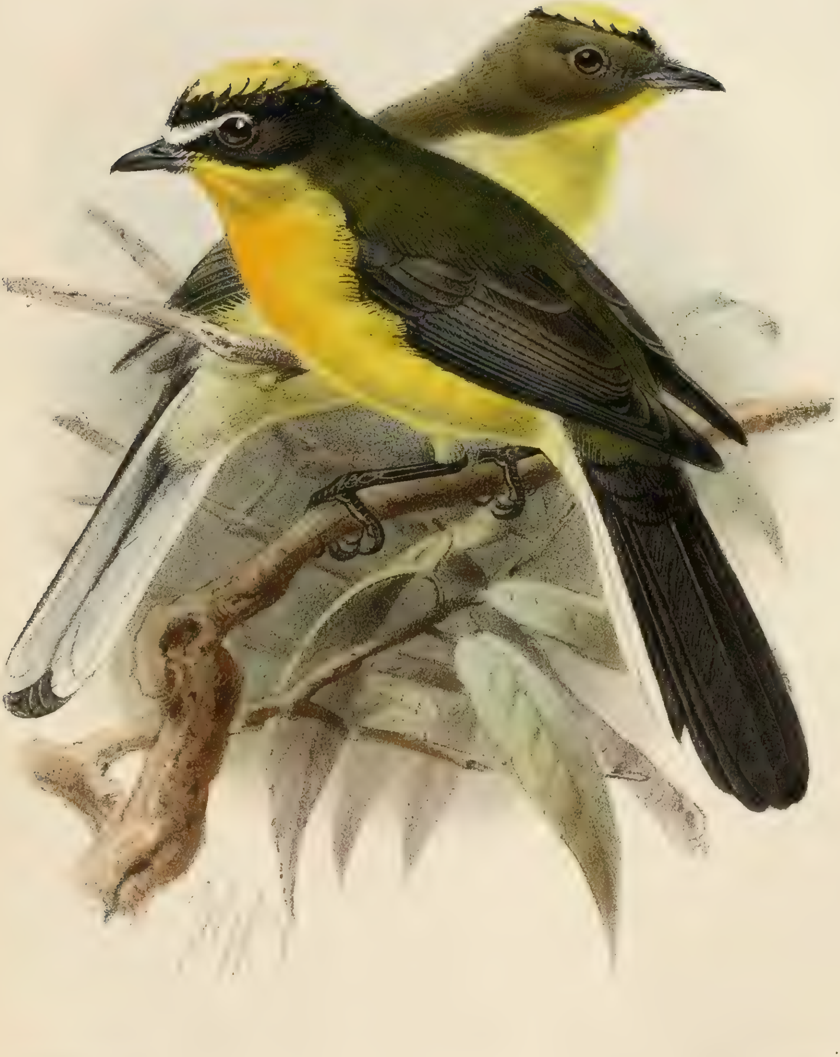
* See Dr. Charles Rogers's 'Genealogical Memoirs of John Knox and of the Family of Knox' (pp. 33–40), printed for the Grampian Club in 1879.

Dr. G. A. Fischer.—We also regret to have received intelligence of the death at Berlin, on November 11th last, of the well-known German explorer and ornithologist, Dr. G. A. Fischer. Dr. Fischer first went out to East Africa in 1876, as a physician at Zanzibar, and made several short excursions into the interior in 1877 and the following years. In December 1882, with the assistance of the Geographical Society of Hamburg, Dr. Fischer undertook a more lengthened expedition. Starting from Pangani, he travelled through Masai-land towards the Victoria Nyanza, and reached the southern end of Lake Naivasha, returning to the coast in the August following.

In August 1885, after a short holiday in Europe, Dr. Fischer started again from Pangani, for the purpose of carrying succour to Dr. Junker, Emin Bey, and the other Europeans isolated in the Soudan by the Mahdi's rebellion, with which object he was sent out by Dr. Junker's brother. Dr. Fischer reached the Victoria Nyanza successfully, but on proceeding to skirt the lake on the eastern side found the country devastated by famine, and was forced to return, without succeeding in obtaining any communication with Dr. Junker and his companions. He reached Zanzibar again in June last, and had only recently arrived at Berlin at the time of his unexpected decease. Besides several geographical papers and two books of travel ('Das Masai-land,' Hamburg, 1883, and 'Mehr Licht im dunklen Weltteil,' Hamburg, 1885), Dr. Fischer wrote numerous ornithological notes, which will be found mostly in the 'Journal für Ornithologie.' The remarkable Touracou, *Corythaix fischeri*, obtained by Dr. Fischer in Wito in 1877, will perpetuate his name amongst naturalists. A general summary of his ornithological discoveries will be found in his "Uebersicht der in Ostafrika gesammelten Vogelarten, mit Angabe der verschiedenen Fundorte," in the J. f. O. 1885, p. 113.



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XII.—*Description of a new Species of the Genus* Setophaga.

By Osbert Salvin, M.A., F.R.S., &c.

(Plate IV.)

Setophaga flavivertex, sp. n.

Supra olivaceo-oleaginea, capite nigro, vertice summo flavo, superciliis et fronte albis, tectricibus supracaudalibus nigris; alis fusco-nigris; caudâ nigricante, rectricibus utrinque tribus externis gradatim albis; subtus omnino flava, crisso pallidiore; rostro et pedibus nigricanti-fuscis. Long. tota 5·2, alæ 2·4, caudæ 2·6, rostri a rictu 0·6, tarsi 0·8.

Av. jr. supra olivaceo-fusca, capite ejusdem coloris; subtus flava, gulâ ochraceo-fusco indutâ.

Hab. Colombia septentrionalis.

Mus. nostr.

Obs. S. albifronti forsan affinis quoad frontem et supercilia alba, sed vertice flavo nec castaneo, dorso quoque olivaceo, facile distinguenda.

Mr. Whitely recently brought me two specimens of this *Setophaga,* together with a few other birds, stating that he had received them from a correspondent who had obtained them in the neighbourhood of the Sierra Nevada of Santa Marta in Colombia. Amongst the other species in the same collection I find *Basileuterus conspicillatus* and *Buarremon melanocephalus*, both discovered by Mr. Simons in this district, and as yet only known to be found there.

That a peculiar species of *Setophaga* should inhabit the Sierra Nevada of Santa Marta was to be expected, and also that its nearest ally should be found in the uplands of Venezuela, the two districts having many zoological affinities, *S. flavivertex*, however, is obviously distinct from *S. albifrons*, its yellow occiput being a peculiar feature, no other species of the genus *Setophaga* having this character.

This is the most important addition to our knowledge of *Setophaga* made since I wrote my synopsis in 1878 ('Ibis,' 1878, p. 302 *et seq.*), though the acquisition of additional specimens of *S. castaneocapilla* from British Guiana has established the differences of that bird from the Bolivian *S. brunneiceps*. A good deal, however, has been written on *Setophaga*. The Central-American species were treated of in the 'Biologia Centrali-Americana,' and Mr. Sharpe has reviewed the whole genus in the tenth volume of the 'Catalogue of Birds.' In his Key to the species, Mr. Sharpe adopts a somewhat different arrangement from mine; but I think the result does not bring out the natural affinities of the species so clearly. The division of all the species, except *S. ruticilla*, into those with crimson and those with yellow breasts, associates *S. miniata* with *S. picta*, and not with *S. verticalis*, to which it is certainly most closely allied; *S. picta* standing apart from the rest.

XIII.—*Notes on some Swiss Birds.*

By Scott B. Wilson.

As a short introduction to these notes, I may briefly mention the chief places in Switzerland at which they were taken. My observations extend over the springs of 1885 and 1886, with a few taken in the winter of 1885, when living at Geneva, where I had the advantage of having access to the

Museum of Natural History under the able direction of my friend M. Lunel, who was always willing to give me information. To Dr. Victor Fatio's kindness in advising me as to the best localities in the Alps for observations on birds I am much indebted for what success I have had, and, lastly, to my old guide Johann Anderegg, whose field-knowledge of birds is excellent and was of great assistance.

I arrived in Geneva in March, and on the 28th went to St. Maurice, a small village in the Rhone valley, some fifteen miles from the east end of the Lake of Geneva, to search for Nutcrackers' nests; but from want of knowing the chasseurs and their language, I was not successful, though one old chasseur told me that he knew that the "Nussheher" nested in the fir-woods near Evionnaz, two miles from St. Maurice. My next excursion was made in the end of May from Chaux-de-Fonds, in the Canton of Neuchâtel, near the French frontier—a very good place at which to observe birds, the town being situated on the slopes of the Jura, and within ten minutes' walk of its pine-forests. There I found the Citril Finch, Ring Ouzel, Firecrest, and Black Woodpecker breeding, and saw a fir-tree whence the year before a nest of the Nutcracker was taken. The latter was in the thick of the great pine-forests, at a lower altitude than Chaux-de-Fonds, and in those forests I hope some day to take the nest myself.

Thus it was not until June 10th that I started for the Alps, fortified with a "permis spécial" from the Government to collect birds, without which one can do nothing in Switzerland. From Geneva I went up the Rhone valley to Simplon and Leukerbad—the latter one of the best-known bathing establishments in Switzerland, almost at the foot of the Gemmi Pass, well known as connecting the Rhone valley with the Bernese Oberland. In the fir-woods about the village of Leukerbad, Crested Tits, Black Woodpeckers, Crossbills, and Ring Ouzels are to be found in fair quantity, and in the lower meadow-land Meadow Buntings, White Wagtails, and many Warblers; Black Redstarts are also very plentiful about Leukerbad. Thence I ascended the

Gemmi (7540 feet) and spent a week in the little hotel of Schwarenbach, making observations on the Snow Finch, Alpine Accentor, &c. From Schwarenbach and the Gemmi I went to Kandersteg, where I observed the Wall Creeper on the very same crags whence my friend Mr. John Hancock obtained specimens in 1845. From Kandersteg I went to Interlaken, Brienz, and up the Haslithal to Meiringen, in the vicinity of which village the Crag Swallow and the Alpine Swift breed. From Meiringen, on June 23rd, I started with Anderegg for the Engstlen Alp (6100 feet), where we stayed till the 28th, finding the Water Pipit (*Anthus spipoletta*) very abundant. On July 2nd I returned to Interlaken, and thence to Berne, where I wished to see the Alpine Swift which breeds regularly in the cathedral; and thence to Geneva: my trip in 1885 extending from June 10th till July 4th.

In the spring of 1886 I made another tour, on which I was more successful, as must generally be the case when collecting in a new country. Arriving at Lucerne on May 26th, some three weeks earlier than the previous year, I went by rail to Göschenen, intending to go up to the St. Gothard Hospice; but on account of the quantity and bad state of the snow I was unable to do this, and was obliged to cross by the Furka and the Grimsel to Meiringen—no easy matter, owing to the snow. From Meiringen I again went to the Engstlen Alp, where I arrived on June 3rd, and stayed till the 11th, the rain pouring in torrents every day, which greatly hindered us in collecting and observing. From Meiringen, on the 15th, I returned to Lucerne over the Brünig Pass, and from Lucerne to Göschenen, as I wished to take the eggs of the Snow Finch myself, having been too early when I first crossed the Furka; from the Furka down to Brieg, and after a visit to the Simplon Hospice, I went, on June 19th, to Leukerbad, to spend a few days there in my old quarters before returning to England. Thus the two places at which I was most successful, and at which I made the longest stay, were the Engstlen Alp in the Canton of Berne and the Gemmi in the Valais.

The following are my observations, more especially on the Alpine species :—

Turdus torquatus. "Merle à plastron," "Ringamsel."

We found several nests of this bird in the Jura (3070 feet) in May, some with eggs, and several with young killed by the snow. On the Engstlen Alp, up to the limit of tree-growth (6100 feet) we obtained some fine specimens in June, and we subsequently shot a young bird on the Gemmi on July 5th. The Ring Ouzel passes the summer in the high forests, and comes out towards evening from the forests to search for worms among the alpine pastures. It arrives at the end of March and departs late in September.

Saxicola œnanthe. "Traquet motteux," "Grauer Steinschmätzer."

We took the nest and saw the young of the Wheatear on the Gemmi (7540 feet), and also obtained its nest on the Furka, at a height of 8150 feet. Although a common bird in the plains, it deserves mention as it breeds at an altitude as high as the Snow Finch, and is one of the few birds which enliven the solitude of the glacier.

Ruticilla tithys. "Rouge-queue," "Haus Rothschwanz."

The first nest we took of the Black Redstart was on June 13th, 1885, during an excursion to the Torrenthorn Alp; it was placed on the cross-beam of a tumble-down old châlet, one of about twenty which are only inhabited in the summer, when the cows and goats are on the Alps. The birds were flying in and out; but we had quite an hour's search before finding a nest, which was composed chiefly of dry grass-stems woven together with hair and lined with Ptarmigan's feathers, and contained two eggs, of a beautiful pale rose-colour before blowing, and afterwards of an extremely pure white. The next spring I obtained a fine series of nests and eggs, mostly from châlets in the environs of Leukerbad; the nests being invariably placed on the long beam which runs from one end of the building to the other, and I remember seeing seven nests (three of which, however, were old) placed on the same beam. This bird generally prefers newish châlets to old ones. At first we used to search all the châlets alike, but soon found that searching old ones was mostly time thrown away. The only nest we found that was not in a châlet was in a hole in a large boulder of rock, close to the little inn on the Engstlen Alp. The Black Redstart certainly breeds twice a year, as we took eggs between the dates of June 2nd and July 7th; and on June 9th in the spring of last year I observed eggs freshly laid, eggs hard set, young just hatched, and young fully fledged and ready to leave the nest, all on the same day.

With regard to there being two distinct species, *R. tithys* and *R. cairii*, Degland and Gerbe say that "the second nesting of *R. cairii* takes place close to the eternal snow, where the Alpine Accentor and the Snow Finch breed, and where *R. tithys* is never seen," thus implying that *R. cairii* and *R. tithys* breed in different regions. Now I observed a male *R. tithys*, with conspicuously black breast, in the breeding-season on the Gemmi, which does away with *one* supposed distinction in the habits of the two species!

REGULUS IGNICAPILLUS. "Roitelet à triple bandeau."

I found this bird breeding in the Jura pine-forests, when searching for the nest of *Chrysomitris citrinella*. The nest which I took is constructed almost entirely of green moss, woven very closely together with hair, and bunches of feathers, among them those of the Nutcracker: it contained eight eggs, the pinkish colour of which renders them very easily distinguishable from those of the Goldcrest. The note of the Firecrest is very like that of the Goldcrest, but still it is distinguishable. We had the pleasure of watching a pair of Firecrests flitting about in a fir within a few feet of us; their motions were just the same as those of their congener, but perhaps they are rather more shy. The Firecrest appears to be not at all uncommon in the Jura; I also met with it in the Jura Vaudois, near Divonne. It breeds in the neighbourhood of Geneva, and I saw its eggs in the collection of my friend M. Demole, taken the year before in a fir-tree in his garden in the environs of that town.

ACCENTOR COLLARIS. "Accenteur des Alpes," "Alpenlerch."

It was in the Gemmi, on the 17th June, 1885, that I first heard the sweet song of the "Alpenlerch," as it is called in Switzerland. A slight noise on my left made me look round, and I saw one of these birds within four yards of me, perched on a flat stone. After looking well at me for several minutes, he began to sing—such a sweet joyous song, reminding me much of a Pipit, but with something very plaintive in it. He sang on for quite five minutes without moving from the stone, so I had good time to observe him: the eye has just the same quiet expression so characteristic of our Hedge Accentor; but the "Alpenlerch" is much robuster in form, and the legs are a lovely and conspicuous yellow-pink. I may here observe that this bird may be kept in a cage by feeding it on the same food as the Warblers, my friend M. Coleman, of Chaux-de-Fonds, having often kept them without difficulty. From the Gemmi we went to the Engstlen Alp, and on excursions to and about the Joch Pass (7200 feet) we again met with this bird. On the 27th June we found a pair which evidently had a nest, though we were not fortunate enough to find it; nevertheless I will shortly describe our search, as it will give an idea of the sort of ground on which they breed—moreover, too, as the nest we subsequently obtained was from the neighbouring Hasliberg, where the country has just the same character as the Engstlen Alp. We went some way without seeing Alpine Accentors, though the place looked just suitable for them, rough broken ground, covered with a thick scrub of the alpine rose and other dwarf shrubs; at last, however, we came upon several pairs hopping about a sort of wall of rock, to which they would persist in returning as soon as we had gone to some little distance off; we then sat down to watch, but though we saw them enter several times into likely-looking places, holes and crevices, we searched every one, as we thought, without success. That at least one pair had a nest here is, I think, most probable, from their so constantly returning to the same place; that they had eggs is also probable, as I never observed a bird with any material for a nest in its bill. My guide ultimately shot one, which proved, on dissection, to be a male. The following June, on the Furka Pass, we observed an Alpine Accentor collecting materials for its nest; it was a very misty day, with occasional storms of sleet. We never saw Alpine birds so close to us; Water Pipits, Alpine Accentors, Wheatears, Black Redstarts, often came within a few yards of us when the mist was very thick, and a Kestrel hovered for some minutes not more than ten yards straight above our heads. The "Alpenlerch" would come to a large rock, the top of which was covered with moss, close to the roadside and to where we were sitting, and creep about in just the same sly way that our Hedge Accentor does, collecting bits of moss, and would then fly off, soon returning for more; we did not search for the nest, as we did not wish to disturb the bird whilst building.

On the 1st June, 1886, we had a nest with four eggs of the Alpine Accentor brought to us at Meiringen by a botanical collector, whom we questioned about it, and he described the species to us, having seen one of the birds quite close. The nest, which he found on the Hasliberg whilst searching for plants, was placed in a crevice, which was a very difficult place to get at. It is round, somewhat shallow, and fairly compact; composed mainly of dry grass-stems and very small pieces of moss, the inside being lined entirely with the same species of moss, still wonderfully green, and five small white feathers of the Ptarmigan. On the 8th July I obtained a young bird of the year on the Gemmi, which agrees with the description of one given by Mr. Dresser in his 'Birds of Europe' from the collection of Mr. Howard Saunders, obtained on the Sierra Nevada, Spain, in August. The white patch on the throat is entirely absent, and the underparts are of a very dusky yellow-brown, and much spotted, as in the young Hedge Accentor.

Of the eight adult specimens obtained, only one was a female, which differed in no way in plumage from the male. In autumn we saw several Alpine Accentors during a botanical excursion to the Dent de Morcles, where, according to Tschudi, they may be seen in small flocks. In winter they descend to the valleys and, according to our old guide, who knows the bird well, they may be seen about the village of Meiringen. The food of this species consists, in summer, of insects and larvæ: in winter of anything it can get. We never observed the "Alpenlerch" shake its wings in the way our own Hedge Accentor so often does, and as we watched it often for a long time together, we doubt if it has that habit. Professor Newton asked me if I had noticed whether the Alpine Accentor had this habit or not.

MOTACILLA ALBA. "Bergeronette grise," "Weisse Bachstelz."

I found this bird nesting near Leukerbad, and obtained two nests with five eggs in each, one of them being placed on the roof of a châlet, the other on the ground; this was at an altitude of 4500 feet. Personally, I never observed it in the alpine region; but according to M. Saratz of the Upper Engadine, "it arrives in March (at first isolated individuals, then in large flocks), keeping in the valleys as long as the snow is not melted on the mountains, and ascends to the heights as soon as the snow has disappeared, after which it is to be found along the edges of any small stream."

ANTHUS SPIPOLETTA, L. "Wasserpieper."

The Water Pipit arrives in April, searches for places free from snow in the Alps, establishes itself there for the whole summer, and in autumn seeks the rivers and lakes of the plains, where some pass the winter; but the greater part migrate by small flocks into Italy. On the Engstlen Alp, on the 25th of June, it was very common, mounting into the air singing, and continuing its song till alighting, invariably on the extreme top of any tree near, generally either a spruce or *Pinus cembra*; it would then rest a few minutes, and begin its song again while still perched on the tree. The song is very simple, the same note being repeated over and over again—*tit, tit, tit*. We must have seen at least fifty in the course of the day, but though we searched most carefully, did not then find a nest. As we were coming back from the Joch Pass we observed a pair of Pipits hopping about a rough stony piece of ground, clearly most anxious about nest or young; but although we searched long, we could find neither. The next day, on returning to the same place, we only saw one bird, which I shot, despairing of finding the nest; it was very much spotted and greatly resembled the Tree Pipit, but I have since made it out to be a bird of the year of *A. spipoletta*. The same day we shot an adult male, with its plumage a good deal worn; however, the reddish colour of the breast and neck and the whitish of the belly, together with the prevailing grey-brown of the upper plumage, make it not at all an ugly little bird. My friend Mr. John Hancock, to whom I gave the specimen, has stuffed it most beautifully, and it is now in the Newcastle Museum. In winter the breast is white, with greyish-brown spots.

On the 10th June, 1886, Anderegg found, on the Engstlen Alp, a nest placed on the ground under the shelter of a large stone, with five eggs. He saw the old birds near the nest, but did not shoot them. I subsequently found a nest myself when walking over the Furka Pass alone, in a snowstorm, on July 17th. The bird flew off this nest, which was placed only two or three yards from the main road, in a depression in the ground overhung by a large rock, and contained five young, just hatched; I took one of them in my hand, the old bird perching on a stone near all the time. The nest is loosely composed of dry grass-bents and stems, resembling very much a nest of the Common Whitethroat, lined inside with a few hairs and feathers.

Cotile rupestris. "Hirondelle des rochers," "Felsenschwalbe."

I saw the Crag Swallow flying about the perpendicular crags of the Gemmi in June 1885, but observed it more particularly and found it breeding on the 1st of June, 1886, near Meiringen. The two nests I saw were placed against the face of an almost perpendicular crag, about thirty yards from the ground, and I could see the head of the old bird projecting, as it sat on the nest; but, alas! both nests were quite inaccessible from below or from above, as they were placed immediately beneath an overhanging projection of rock. We watched the birds nearly all day—both when high above with slow undulatory flight, and when dashing past, catching insects. They are conspicuous on the wing by the large oval white spots on the inner web of the tail-feathers. We shot two, a male and female. The sexes do not differ in plumage.

According to our guide, Anderegg, the Crag Swallows pass the winter here in the Haslithal, hiding in caves and crevices in the rocks; and he says he has seen them in winter flying about the village of Meiringen. We also saw this bird about the rocks of the Brünig Pass.

TICHODROMA MURARIA. "Tichodrome échellete," "Mauerläufer."

Of the Wall Creeper I was not successful in obtaining the nest; indeed, in the two springs that I passed in Switzerland I only saw six specimens, and obtained one—a male in summer plumage—on the Gemmi in June. I saw four on the great crags near Kandersteg, and one on the 10th November creeping up the wall of the Académie at Lausanne. Anderegg says that they are very common at the Teufelsbrücke, near Göschenen; but unfortunately the day we were there was very wet, which no doubt accounted for our not seeing them. Anderegg, who has accompanied Dr. Victor Fatio and other naturalists, and whose observations on birds are generally to be trusted, told me that "at the time of the moult from the breeding-plumage in July and August, the bird loses half of its long bill, which, however, soon grows again;" and he has sent Dr. Fatio specimens to prove it. I have not seen Dr. Fatio since, to ask him. In the collection of Herr Stauffer of Lucerne, I saw a pair of old birds with three young stuffed, all of which he obtained himself in the Grisons.

The note of the Wall Creeper, according to my own observation, resembles that of the Tree Creeper, but is clearer.

M. Lecthaler-Dimier, of the Museum of Natural History at Geneva, told us that in winter he had often shot the Wall

Creeper on Salève, a mountain close to Geneva, celebrated as a breeding-place for *Neophron percnopterus*, and on which, in winter, the Snow Finch and Alpine Accentor are also to be found. Some interesting observations by Dr. Girtanner, on the bringing-up of a family of this bird, are to be found in the Proc. Nat. Hist. Society of St. Gall for 1867–68.

CHRYSOMITRIS CITRINELLA. "Venturon," "Citronenzeitig."

Leaving Chaux-de-Fonds early on the 28th May, we arrived at the small village of Gennevys-sur-Coffrane about 6 A.M., and began to ascend through the glades of pine-forests Our first find was a nest of *Parus ater*, with five eggs; and, perched on a bush close by, we observed a fine male of *Lanius collurio*, in whose song we recognized imitations of the Lark and Linnet. These woods are a great place for Woodcocks, and on the way my friend, a sportsman as well as naturalist, showed me the place where many a "bécasse" had met its death. Our chasseur brought us a Sparrowhawk's nest with five eggs, two Ring Ouzel's with five eggs in each, and a Linnet's nest.

After breakfast, at an altitude of 3000 feet, we began our search in earnest for the Citril Finch, of which we soon observed a pair, pecking about on the ground, collecting materials for a nest. A few minutes afterwards we saw a nest placed high up in a spruce-fir, at the extreme end of a branch; the chasseur climbed up and brought down the nest, with three eggs. This nest, which contained several feathers of the Nutcracker, was cup-shaped, and constructed chiefly of dry grass-stems, moss, and thistledown, woven together with fine roots and hair, lined with thistledown and feathers. Another nest contained no feathers, being lined entirely with thistledown. A third was lined entirely with hair, and very little thistledown had been used in its construction.

After lunch we found two more nests, with three and five eggs respectively, both placed at the extreme end of a bough. Then we came upon a Ring Ouzel with five young, killed by the snow; soon after, a Buzzard passed quite close to us;

then we saw a pair of Kestrels, and then a pair of Buzzards, one of which kept mounting the air in circles till almost lost to sight. It suddenly (as I saw clearly through my glass) began to hover, in the same way as a Kestrel, then, partially shutting its wings, came down at a great rate, just as a Lark does, after soaring, the last few yards before reaching the ground—an action I never observed in a Buzzard before.

We now began to descend, and our next find was a nest of *Parus borealis* in an old tree-stump, quite finished, but with no eggs; according to my friend, this species always breeds in old stumps. Not far from here he showed me a fir tree in which he and the chasseur who was with us had taken a Nutcracker's nest three years ago, early in March, the snow being then some two feet deep in the forests. I took a large piece of lichen from the tree as a souvenir. We only heard the Nutcracker once that day, although keeping a good look-out. We next found a nest of the Firecrest; the old birds were very tame, hopping about within a few feet of us. At 5 o'clock we had our tea on a small plateau, with a magnificent view of the distant Alps, now tinged a lovely rose-colour by the setting sun; the sky, too, was a rich pinkish yellow, and the Lake of Neuchâtel below us as smooth as glass and reflecting even the smoke of the steamboat. While sitting here, a Black Woodpecker flew across, uttering its shrill note; and our chasseur said he knew of a nest with young, but that it is by no means common in these forests. He also told us that he had seen the first Quail that morning, and also a Blackcock and two Greyhens. We got back to Chaux-de-Fonds about 9 o'clock, after a most enjoyable ramble after birds in the Jura.

LINOTA RUFESCENS, Vieillot.

Of six specimens, all shot on the Engstlen Alp, one only had the breast red. I also observed this bird on the Gemmi, where it was very plentiful, frequenting the rising ground just behind the inn of Schwarenbach. While staying on the Engstlen Alp, on June 8th, 1886, Anderegg, found a nest containing four eggs, placed in a very thick dwarfed fir. He was much delighted, and said that it was "nie in der Schweiz gefunden;" but a note of Dr. Victor Fatio on this species, under the name of *Fringilla borealis*, in M. Saratz's "Catalogue of the Birds of the Upper Engadine" (Bull. Soc. orn. Suisse), says:—"It is always the *F. borealis* which I have met with in other parts of the Alps, nesting up to the edge of the glaciers."

MONTIFRINGILLA NIVALIS. "Niverolle," "Schneefink."

This bird we observed at a greater height than any other Alpine bird, at the foot of the Lammern glacier (7600 feet), and we found it breeding at the summit of the Furka Pass, as well as at the Gemmi, to which places these notes principally refer.

The first Snow Finches we saw were a pair on June 12th, 1885, on the Gemmi Pass; and on the following day, during an ascent of the Torrenthorn, we saw on one of its lower slopes a Snow Finch running about on the snow in company with a pair of Alpine Accentors. Higher still (about 9000 feet) we saw this species in small flocks. On the 17th June we ascended the Gemmi, and took up our quarters at a small inn at the very summit of the Pass, intending to do our best to find a nest of the Snow Finch and to observe other Alpine birds. On the 18th we got up at 3.30 A.M., and saw several pairs about the house, one pair being so tame that they took bread thrown to them, just as Sparrows do. We sat down to watch, hoping to track them to their nest; but they flew over the edge of the Pass and were soon lost sight of. All the ground was covered with snow, and we could not see where it was possible for the birds to have their nest except among the perpendicular crags of the Gemmi which do not hold the snow; and there it turned out to be. On the 19th June we had gone on overnight to the little town of Schwarenbach; but we thought we would give the Gemmi another trial: so we started from Schwarenbach at 2.30 A.M. We got back to the Gemmi about 3, the path not being easy to find, as there were only a few stakes here and there to show it, and we often sank into the snow above our knees. Arrived at the Pass, we sat down to watch for birds, while our chasseur went off with the gun. We had not waited long before we saw a pair of Snow Finches flying backwards and forwards, always to the same place—a great isolated mass of rock high above the right-hand side of the path, and quite inaccessible, at least from below. The parent birds were, we should say, judging from the date (27th May) on which we subsequently found a nest with young, bringing food to their young. All the time they were flying backwards and forwards they kept uttering their rather peculiar note, which greatly resembles that of the Brambling. When the chasseur came back, we attempted to get at the place to which we had seen the birds flying, and where the nest evidently was, from above; but this, though the chasseur was a well-known chamois-hunter, we found to be impossible. Thus, though not successful in getting a nest, we saw at least in what sort of a place, for want of a better, the Snow Finch breeds.

We recrossed the Gemmi on July 15th, and on the wild desolate country round the Daubensee, which was now almost free from snow, we met with a family of Snow Finches—two old birds and three young ones of the year,—and were successful in obtaining the three young and the male. The pure white of the breast and underparts of the young birds, together with the clear bright yellow of their bills, was very distinctive, as compared to the worn dirty-white underparts and pale bluish-yellow bill of the old bird. These young were most probably bred among the crags of the Gemmi, and, as soon as they were able to fly, were brought by the parents to search for their food (small seeds, of which their crops were full) among this rocky and desolate-looking waste. There is scarcely any vegetation here except dwarfed grass; the rocks themselves are, however, mostly covered with the pretty little *Azalea procumbens*, with here and there patches of gentians (*G. acaulis* and *G. verna*), *Ranunculus alpestris*, and other Alpine plants, with their lovely bright colours.

In the spring of 1886 we were successful in finding the Snow Finch's nest, but in a very different place. Remembering that our friend Dr. Fatio had advised us to look about under the eaves of any small buildings near which we saw any Snow Finches, we went straight to Lucerne (where, we may remark, *en passant*, that Herr Stauffer has a fine collection of Alpine mammals and birds), and thence to Göschenen, intending to search the St. Gothard. On the 27th May, with Anderegg, who had accompanied me the previous spring, I left Göschenen at 11 A.M., intending to push on to Meiringen over the Furka, as we heard from the innkeeper at Göschenen that the Saint Gothard was impassable, owing to the soft state of the snow—the road over this Pass not having been cleared of snow since the opening of the St. Gothard Railway. We slept at Realp, the highest village in Switzerland except Mürren. Next day we left Realp early, and found men hard at work clearing the Furka road of snow, which they had done to within twenty minutes' walk of the Hospice; but in places where it had been only partially cleared, we walked between walls of snow 10 feet high. When we got within fifty yards or so of the Hospice, we were delighted to see Snow Finches flying all about, and perched on the roofs of the buildings, singing gaily. Arrived at the Hospice, which was as yet only inhabited by two men and some St. Bernard dogs, we procured a rickety old ladder, which we put up against one of the outhouses under the roof of which we saw a Snow Finch fly in; and there I found the nest, placed on the top of the wall of the building, covered by the roof: it was finished, but contained no eggs. We tried four more nests, all placed under the slates, the old birds sometimes perching quite close to us, piping vigorously and much excited. Some of these nests were not yet finished, and none contained eggs. One nest, built in a hole in the tower of the Hospice itself, we were able to look right into from a window on the first floor; it was a very large nest, quite finished, and it was afterwards brought to me. Besides this nest, we only found one which was not under the eaves, and that was placed in a hole in a wall made of stones, the bird entering by a very small aperture, so that we had to remove several stones to get at the nest, in which the birds had not yet laid. I have since received eggs and a nest from here, of which a short description is given below. On June 16th we recrossed the Furka, in the hope of taking the eggs ourselves; but now all the nests contained young just hatched, to which the old birds were bringing small larvæ and insects in their bills.

From these observations it appears that the Snow Finch breeds at an altitude of not less than 6500 feet, and lays about the end of May or the beginning of June, at a time when the ground in these Alpine regions is entirely covered with snow; from which cause, I suppose, it is obliged to place its nest under the roofs of buildings, or, where there are no buildings, in rocks which do not hold the snow—the former not only affording them a dry nesting-place, but one which also protects the nest from the storms of snow and sleet, which have by no means ceased to fall by the end of May.

A nest obtained on the Furka is made principally of dry grass-stalks, intermingled with which are tufts of hair, wool, leaves, shavings of wood, and a few feathers; the inside walls are lined with Ptarmigan's feathers, both white and brown, these being woven together very compactly with horsehair, and in the nest before me also with strands of green worsted. The bottom of the nest is not lined with feathers. The outside diameter, which is nearly round, is 8¼ inches; the inside diameter 3½ inches; thus the inside cup is small in proportion. The eggs are pure white, and from three to five in number.

To these personal observations perhaps I may add some information we received from several people while in the Alps. The Snow Finches in winter descend from the Alpine region to the lower valleys; and a lady who spent a winter at Leukerbad told me that they used to sit on a tree in the courtyard of the hotel to the number of thirty or forty, and would fly down and pick up bread from the ground. At the Simplon Hospice, where we spent a night, one of the monks (who, by the way, had a fine collection of insects) told me that these birds come into the corridors and are very familiar. One spring he caught a "Niverolle," which he shut up in a room, feeding it on grain and rice, and it became so tame that it would sit on the desk where he was writing; he kept it through the winter, and let it go the following spring. At the Furka the owner told me that several years ago he used to amuse himself with watching a pair of Snow Finches playing with a St. Bernard. They would never let the dog eat in peace, but would fly down, feigning to strike at him, until the dog got furious, and barked and snapped at the birds, which only seemed to enjoy the fun all the more.

I do not think there is a prettier sight than a flock of Snow Finches on the wing; with the sun shining on them, the black and white of their plumage shows so beautifully, and when they are flying up slowly against the wind they look just like great black-and-white butterflies.

Pyrrhocorax alpinus. "Choquard," "Steinkrähe."

I obtained specimens on the Gemmi; but was not successful in finding the nest, although I saw a pair of these birds in the breeding-season repeatedly entering the same cleft in the rock, halfway up the Pass, where, no doubt they had their nest. Their flight is powerful, and as they rise high into the air in circles, it reminds one of that of a Falcon; their harsh cry is heard at a great distance, as we observed on the Gemmi, when, after firing a shot, any Choughs which happened to be concealed in clefts in the rock, would dash out, screaming loudly, and fly away far down beneath us. They appear to feed in flocks of not more than forty, at least we never saw more in a flock, and very often not more than twelve. In harvest time, according to my chasseur, they descend to the fields and feed on grasshoppers. They also nest in large colonies in several places in Switzerland, of one of which we were told the whereabouts, but unfortunately had not time to visit it.

Cypselus melba. "Martinet à ventre blanc," "Alpensegler."

On July 3rd we paid a visit to the cathedral at Berne, where the Alpine Swift breeds regularly in large numbers. On approaching the building we saw great numbers of them flying round the tower, uttering their harsh scream; we then went up the tower and questioned the custodian, who told us that all the birds were now sitting, and that most probably the young were hatched, but that we could go and see for ourselves. We then went higher still to see the nests, the floor being very dirty, owing to the mutings of the birds, to say nothing of the dust; it was also very dark, there being no light except from under the roof. The nests, of which we could see about twenty, were placed on the ledge which goes round the tower, and about 4 feet below the main floor, on which we were standing, so we were obliged to kneel down and look very quietly over the edge at the nests; sometimes there were three or four in the space of 3 yards, all placed on the same beam, and on most of the nests which we could see there was an old bird sitting. On making the least noise, the sitting birds would immediately look up at us, and then roll themselves off the nests, disappearing with harsh screams into the air, but would soon come flying back again under the roof and crawl to their nests.

The male and the female appear to take turns in sitting on the eggs, for as we were watching a bird on its nest, another Swift suddenly dashed in under the roof and began to caress the bird on the nest; they both kept twisting their heads about, rubbing against each other's cheeks with open bills; then the sitting bird rolled itself off the nest and vanished into space, the other taking its place.

We were lucky in finding one nest which still contained two freshly laid eggs, which we took; other nests contained eggs already much incubated, and one had young just hatched, with only a little black down on them. The nest is very shallow, constructed of dry leaves, bits of paper, a few dry grass-stems, bits of fir-bark, and a few feathers, the whole being made fairly solid by the mucous fluid which the bird emits. The nest was infested by a parasite. The eggs, generally four in number, are pure white, and out of 35 eggs we obtained no varieties in colour, but some are much larger than others.

The Alpine Swift nests in colonies in many of the cathedral towers in Switzerland, and also among high crags in the Alps. I observed several pairs on the Gemmi, also at Meiringen, where I shot one on June 12th as it was flying about some crags, in company with Crag Swallows and Common Swifts.

The note is very powerful and different from that of the Common Swift, added to which the white underparts, brownish upper plumage, and the enormous length of wing render this species easily distinguishable. It arrives at the end of April or beginning of May, and leaves between the middle of September and the middle of October, according to the season. Sometimes they have already left the cathedral of Berne by the end of August.

GYPAËTUS BARBATUS. "Lämmergeyr."

This bird has now become very rare in Northern Switzerland, though several pairs still breed in the Grisons. The only specimen I saw recently killed was one which Herr Stauffer of Lucerne was stuffing; it had been lying for some days in the snow before he received it, and the difficulty in preserving it must have been great, as the feathers of the head and neck came out at the least touch. I observed fine specimens in all the museums, particularly in Herr Stauffer's collection; but owing to the high prices given by these establishments this species has become so rare that in a few years it will probably be no longer found in Switzerland.

AQUILA CHRYSAËTUS. "Aigle royal," "Steinadler."

I observed about a dozen specimens of this noble bird during the two springs I passed in Switzerland. On the Engstlen Alp, where marmots are very abundant, they form the Eagle's principal food, a fact which I do not remember to have seen mentioned by any author. On 26th June, 1886, we watched an interesting chase; the sharp whistle of a marmot was heard, and looking down we saw an Eagle in full pursuit, flying close to the ground, and the marmot running at full speed, screaming loudly: it just gained its hole in time.

The Golden Eagle cannot be common, at any rate in the Canton of Berne, as my old chasseur has only shot three in forty years; he tells me that a dead marmot is the surest bait. All the museums have a number of specimens of this bird, and to this cause, as in the case of the Bearded Vulture, its rarity may be attributed.

MILVUS MIGRANS.

The Black Kite arrives towards the end of March or beginning of April, and departs in September. It is to be seen near Geneva, fishing in the Rhone, and also on the lake at Lausanne. When bathing, a Black Kite has often come within a few yards of me, every now and then carrying off one of the small fish which swim in shoals near the surface of the water, and which the natives call 'Sardines' (*Alburnus lucidus*). It breeds on Salève near Geneva, where I have seen several pairs in May; also near Neuchâtel, and in the rocks near Villeneuve at the east end of the lake. In September 1885 I received a live specimen of this bird, taken from the nest on Salève, which had already been two years in captivity. My friend M. Hermann Goll kept it for me in his aviary at Lausanne, and when I left in January the bird had become very tame, knowing M. Goll and myself perfectly, and showing great delight when we came near the cage. It fed chiefly on raw meat varied with Sparrows, but what it liked most was the head of a duck, off which it would peck every morsel; we gave it no fish at all, though in a wild state the Black Kite feeds principally on fish.

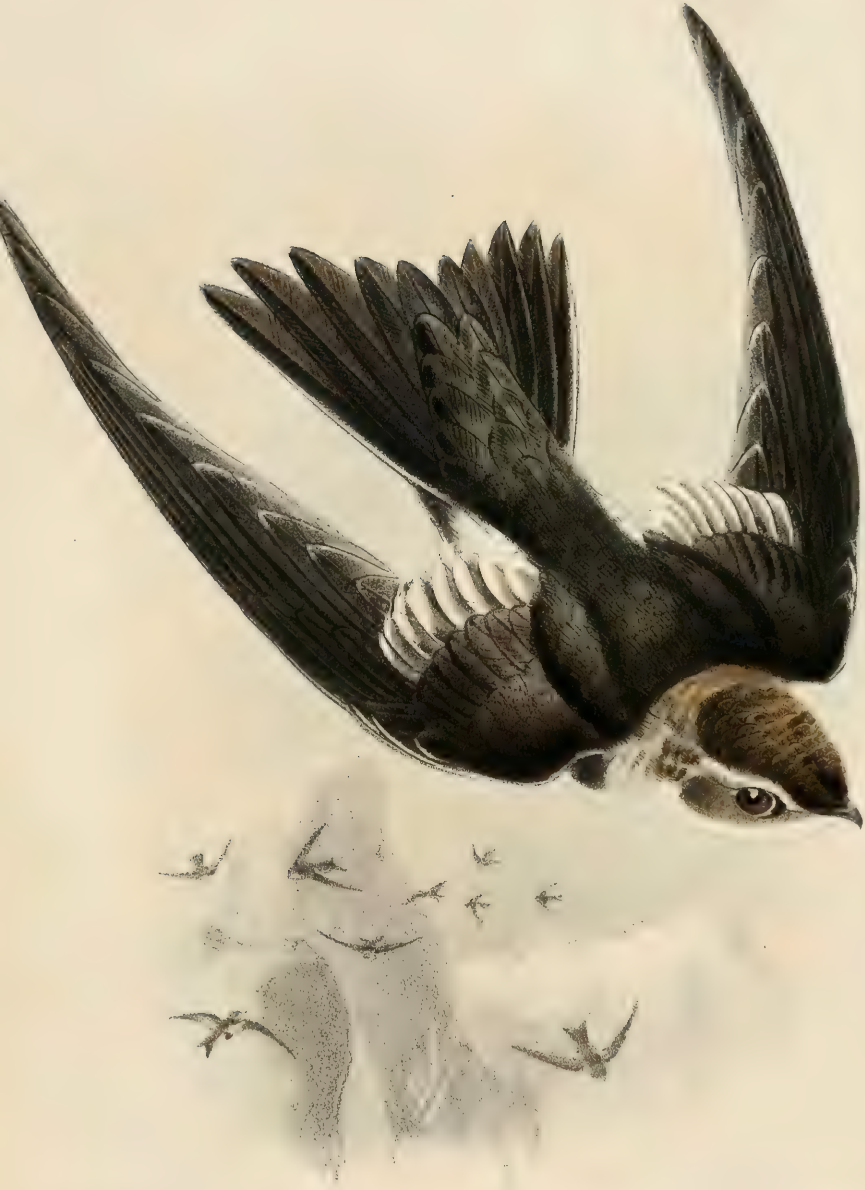
On May 3rd, 1885, from the promenade which runs along the edge of the lake of Neuchâtel, I watched a pair of Black Kites fishing; they were wonderfully clever in eating while on the wing; and I saw very clearly through my glasses how they managed this. The Kite would swoop down and carry off a fish in its claws from the surface of the water, and then mount from 20 to 40 yards above the surface of the lake, going straight up from where it had found the fish, and thus not losing any hunting-ground; it then lowered its expanded tail, and, at the same time grasping the fish in the claws of one foot only, bent its body downwards and forwards, until it was able to reach the fish with its bill, which it then attacked voraciously, tearing at it repeatedly, until the fish, which during the operation remained firmly grasped in its claws, was finished. During this meal the Kite remained quite stationary in the air, not descending in the least. A habit of the Black Kite I noticed was, that when one Kite was flying a few yards only above the surface of the lake, looking out for food, it was almost invariably accompanied by its mate, at an immense height, but almost straight above. In this way the two traversed at least two miles of the lake; then the one which was flying above would descend and join its mate, and they both flew away together to the further side of the lake, where they no doubt had a nest.

CACCABIS SAXATILIS.

I saw several pairs in the breeding-season in different parts of the Alps, but the species was nowhere abundant. I obtained a nest with twelve eggs from the Torrenthorn, near Leukerbad; and on the Engstlen Alp I shot a male on June 8th, 1886.

It is a truly Alpine bird, not being found at all in the Jura; in summer its food consists of the buds of the Alpine rose and of other plants, insects, &c. In winter, however, like other Alpine birds, it descends to the lower valleys and lives upon all kinds of seeds, berries of the juniper, and pine-needles.

I saw one alive in the possession of Herr Stauffer at Lucerne, which he had had for two months, and M. Goll, of Lausanne, kept one for some time in his aviary; he tells me it is not a difficult bird to keep in captivity.



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MICROPUS MELANOLEUCUS.

XIV.—*Observations upon the Habits of* Micropus melanoleucus, *with Critical Notes on its Plumage and External Characters.* By R. W. Shufeldt, C.M.Z.S., Capt., Med. Corps, U.S. Army.

(Plate V.)

My first acquaintance with this very interesting Swift was made during the spring of 1878, while I was on my way from the little frontier town of Cheyenne, Wyoming Territory, to the military station of Fort Laramie, situated some 80 miles to the northward of it. On the Chugwater Creek, about halfway between these two points, we pass some very high and imposing chalk cliffs which constitute the more striking and prominent features of the landscape, as the country about them is low and unbroken, being quite prairie-like in its character.

The head of one of these large chalk-bluffs, as it stood out against the clear blue sky and far above me, actually looked, with the cloud of white-throated Swifts swarming about it, like some great beehive from which the inhabitants had been suddenly aroused. These birds were far above the range of my fowling-piece, though one, now and then, dipped down with the most inconceivable velocity and in a graceful curve over my head, as if to obtain a better view of me. A snap-shot brought down one of these more accommodating individuals, whose curiosity cost his life, and gave me not only a beautiful specimen, but the opportunity to examine in the flesh, for the first time, one of the then rarest birds in our American collections.

During the past eight years I have only caught glimpses of single specimens of this bird here and there, and sometimes in the most unexpected places. Once, far out on the open prairie, in the north-western part of the United States, a magnificent adult Swift of this species shot by me with the velocity of a meteor, his white flank-patches contrasting conspicuously with his black-brown body and wings. It was not, however, until I came to Fort Wingate that the opportunity was really afforded me to more intimately study and observe this Swift in its favourite haunts; for all through north-western New Mexico occur deep, even-walled cañons of rock, to which *Micropus melanoleucus* resorts to rear its young.

Early in the spring of 1885 (April) I found some two dozen pairs of them in just such a cañon about three miles west of Fort Wingate. The walls of this magnificent gorge are of solid rock, being nearly 350 feet deep in some places, and for the most part roughly perpendicular, though frequently arching over and outwards at their summits. It was within the deep and crack-like fissures seen in the walls of the eaves of these latter recesses, away high up on either side of this rocky chasm, that *Micropus* resorted to lay its eggs. So wisely had every pair of these birds chosen the cleft wherein their nests were hidden, that all my plans and attempts to secure a set of eggs proved futile; and Professor Coues tells us that they "do not appear to have been taken yet, but are presumed to be white, as in all the species the eggs of which are known"*.

However, I find Dr. Heermann, the ornithologist who accompanied one of our early surveys, expressing himself in the following words upon the nidification of the "White-bellied Swift" in his report. He says:—"I met this bird several times, first in San Fernando Pass, near 'Los Angeles,' again near Palm Spring, between Colorado desert and Vallecita; again near Tucson, and, lastly, in Texas, always, however, flying at a great height, being either far beyond or on the extreme limit of gun-shot range, and was therefore unable to do more than slightly wound one of them.

"From the extent of their wings, the birds of this family appear to be formed to live in the air, where, in fact, they pass most of their time, gliding about in extensive circles, without effort, and apparently little motion of the wings.

"This ease of flight stands them in good need in their migratory movements, allowing them readily to pass into warmer climes. During pleasant weather they find their insect prey in the upper air, but when cloudy or rainy we find them skimming the ground in their pursuit. When on the ground, the shortness and weakness of their legs, added to their length of wing, incapacitates them from again rising in the air; hence I have several times seen the European species, *C. murarius*, picked up in the streets of Geneva, Switzerland, having fallen there during a quarrel with its fellows. When they wish to take rest during the day, which is rare, they always alight on some elevated point, whence they can throw themselves into the air and take to wing.

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* E. Coues, 'Key to North American Birds,' 2nd ed. (Boston, 1884), p. 456.

"Though numbers were flying about the rocks near Tucson, I heard them utter no note. Sociable among themselves, gathering in large flocks, they never mingle with their nearly related brethren the Swallows. They generally construct their nests in the crevices of rocks or the holes in old buildings, many species having secretory glands, exuding a glutinous substance with which to fasten them firmly. The eggs, from 4 to 6 in number, are pure white and of an elongated form" *.

Some of these observations I can confirm, but up to the present time I have never been so fortunate as to see one of these Swifts alight in any locality. On one occasion I saw a pair of them commence to quarrel high up in the air, and continue the closely contested claw-and-wing conflict until they reached the ground, where the dust they raised prevented me from clearly seeing their movements; but in a second they were both in the air again, and off like two darts, in different directions.

Very rarely have I seen them circle about, as described by Dr. Heermann, but, on the contrary, at all times during ordinary flight, either high up or low down, there is, at closely following intervals, rapid movements of the wings. Sometimes one will shoot down from an enormous height into the cañon I have alluded to above, to very near the ground, when it will ascend close to its wall with almost equal velocity, and at once enter the fissure wherein its nest is. Such a movement is invariably accompanied by a loud whirring noise made by its sharp wings, a sound much intensified by the acoustic properties of the walls of the cañon. It was under such circumstances that I secured the only two specimens I obtained during the year 1885.

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* A. L. Heermann, M.D., in 'Reports of Explor. and Surveys to ascertain the most practicable and economical route for a Railroad from the Mississippi River to the Pacific Ocean,' 1853–56, vol. x. (Washington, 1859, p. 10) of report on the Birds.

As already observed by Coues (*loc. cit.*), the note of this Swift is "a loud shrill twitter," and I may add that in character it commences rather slow with the several utterances quite distinct, but advances and closes with the sounds increasing in rapidity. These birds have a habit of giving vent to this peculiar twitter while they are within their nests or in the clefts wherein they are concealed, a practice also common, as we know, to many species of Swallows.

The best and about the only opportunity one has of collecting specimens of this Swift is, as Dr. Heermann remarks, upon rainy and cloudy days. At such times as these I have seen them skimming close over the sage-brush on the prairie about Fort Wingate, or, as the weather clears up a little, rising high in the air to career about over the surrounding hills, where, from their great elevation and rapid flight, almost in the clouds, it taxes one's eyes to follow them.

A few days prior to the 8th September, 1886, we had here a rainy and cloudy time, but the Swifts kept pretty high up, and when they did condescend to sweep down towards the ground it was with a velocity that would tax the skill of the best shot in the world. However, I tried them, and out of thirteen shots, fired in about one hour and a half, I secured five fine specimens. A few days afterwards (11th September) a still better day, in fact as good a one as we could hope for for the purpose, presented itself, and I hastened to the open where my favourites usually could be found at such times. To my delight I saw some thirty or forty skimmering low over the ground, like so many black-and-white meteors, and I immediately chose a suitable position to try for them. My success on this occasion far exceeded my most sanguine expectations, for in a little more than an hour I bagged ten beautiful specimens out of just a dozen shots. These fifteen birds are now before me, and about them I would offer a few remarks.

Dr. Heermann, in the Report I have already quoted above, gives the original description of the specific characters of this Swift in the following words :—" Head dusky brown; body, tail and wings, dusky black; throat, breast, and a band, half inch in breadth from breast to vent, white; ends of larger coverts tipped with white; a large white patch on the flanks, a faint white line over the eye and the outer edge of the first primary white. Length 5½ inches." Coues (*loc. cit.*) says :—" Black or blackish; chin, throat, breast, and middle lines of belly, tips of secondaries, edges of outer primary and lateral tail-feathers, and a flank-patch, white. Forehead and line over eye pale; a velvety black space before eye. Bill black; feet drying yellowish. The purity of the colour varies with the wear of the feathers, some specimens being a dull sooty brownish, others more purely and even glossy blackish. The extent of the white along the belly is very variable. The flank-patches are conspicuous in life, sometimes almost meeting over the rump. Length 6·50–7·00; extent about 14·00; wing the same as total length; tail about 2·66, forked, soft."

Now judging from the fifteen specimens of *Micropus* in my hands at the present time, these descriptions are more or less faulty. In the first place I find by careful measurements that none of these birds measure 5½ inches (Heermann), nor so long as 6 (5·50–7·00, Coues). They all fall between 5½ and 6 inches, while in total alar extent they measure about 13½ inches. I find further that it is the females only wherein the black parts are a dusky blackish brown, and the crowns of a much lighter grey, the feathers being edged with lighter in the latter situation. The black parts in the old males become very dark, and in their vernal plumage show a *dark green* sheen in certain lights.

Instead of a " velvety space before the eye," as described by Professor Coues, I find a peculiar whorl of black and *rather stiffish* feathers. It is present in both sexes.

The position of the white flank-patches is quite constant, as to their size and colour, and they only meet "over the rump" when we cause them to do so, the long soft feathers of the parts easily admitting of this. The extent of the white on the throat and upper breast is also quite constant, though the median ventral stripe may vary either in width or length. I see in some of the specimens it does not quite reach the vent.

There are *eight* secondaries in either wing, more or less deeply tipped with white, the white extending highest on their outer vanes. The primaries are also *finely* emarginated with white, and, as has been described, the entire outer vane of the first one is pure white.

Unless we have here a new variety of this bird I cannot quite understand how both Dr. Heermann and Professor Coues overlooked the peculiar coloration of the *tail*. Coues evidently gives us to understand that the outer edges of the lateral tail-feathers are also white. I find this to be the case in the lighter-coloured specimens, while in all the middle pairs of tail-feathers are of the same colour as the rump. But this is not the only feature that has apparently been overlooked; for in *all* my specimens, better marked in some than in others, the remaining tail-feathers are characterized by a white or greyish-white elongated spot on the inner vane of each feather. These spots become gradually smaller as we proceed outwards, while they are all shut out from sight by the feathers overlapping each other and the lower rump-feathers when the tail is closed. In one fine specimen of a male in my lot, I find these elongated sub-elliptical spots of a pure white, large, and absent on the lateral feathers, which latter are distinctly emarginated with white along their entire outer edges.

The upper eyelid in *Micropus* is naked, but a single row of minute brown feathers lines the free edge of the lower one. The skin covering the feet in the living birds is of a bright flesh-colour. The hind toe is not nearly so lateral in its position as it is generally described to be. When at rest it naturally assumes the more normal posterior position, but is easily moved to a lateral one, from which it springs back to the rear of the metatarsus when loosed.

In other particulars the descriptions of Heermann and Coues answer very well; and the principal errors I find to correct are:—(1) the length; (2) the general coloration, especially of the tail; (3) feathers on the eyelids, not "naked" (as stated by Coues); and (4) the characters of the feet.

Through the courtesy of Mr. Robert Ridgway I have received from the collections of the Smithsonian Institution the following well-selected specimens for comparison with my series:—

One....	Colorado.	H. W. Henshaw.	Cat. No.	94684.
,, ...	Lower California.	L. Belding.	,,	97605.
,, ...	Tucson, Arizona.	E. W. Nelson.	,,	99205.
,, ...	Lower California.	L. Belding.	,,	100316.

After a careful examination of these four skins I fail to find any essential differences from those collected by me here at Fort Wingate, N. Mexico. They all possess the characters set forth in this paper, including the white markings on the inner vanes of their tail-feathers, near the bases.

All of my birds were covered with a rather large species of louse; but two of them had each on their bodies a pair of extraordinary and very large ticks, the names of which I am at present unable to give. One pair of these parasites I sent to my friend Lieut. Thomas L. Casey, of the U.S. Engineer Corps, a well-known entomologist, while the remaining pair I send herewith*.

* [The parasites forwarded by Dr. Shufeldt have been examined by Mr. Charles O. Waterhouse, of the British Museum. Mr. Waterhouse informs us that they consist of specimens of a bird-louse (*Anopleura*) not easily determinable, and of two examples, apparently females, of a singular new parasitic dipteron, of the family Hippoboscidæ, closely allied to *Anapera pallida*, which is found on *Cypselus apus*, but much larger, and distinguished by the almost total absence of wings. Mr. Waterhouse has described this insect under the name of *Anapera fimbriata* in the Proc. Zool. Soc. Lond. for the present year.—Edd.]

It has given me much pleasure to send for illustration a skin I made of the handsomest male specimen of these Swifts taken on the above occasion. The coloured figure of this Swift illustrating Dr. Heermann's Report (1853, plate xviii.), already alluded to, is an unusually poor representation and, to me, hardly recognizable. In fact I do not believe there is a good coloured figure of this truly interesting bird in existence, and I have availed myself of the present opportunity to present a coloured figure of a fine old male bird.

28th September, 1886.

XV.—*On* Falco babylonicus *and* Falco barbarus.

By John Henry Gurney.

In 'The Ibis' for 1882, p. 439, I wrote respecting *Falco babylonicus* that it seemed chiefly to differ from *F. barbarus* by its larger dimensions, and I added that, at that time, I believed I had never seen an adult male of *F. babylonicus*. Since then the British Museum has acquired—partly through the liberality of Mr. Hume, and partly through that of other donors—a very fine series of *Falco babylonicus*, which I have recently had an opportunity of examining, arriving, as the result, at the conclusion that, whilst the females of *F. babylonicus* are decidedly larger than those of *F. barbarus*, the males of *F. babylonicus* differ but little, either in size or colour, from *F. barbarus*, in which latter species the proportionate distinction of size between the sexes is less than in *F. babylonicus*. I observe, however, that the adult males of *F. babylonicus*, when compared with the few African adults which I have examined of *F. barbarus*, exhibit, in most instances, a somewhat paler grey on the lower part of the back, upper tail-coverts, and basal portion of the tail; that most of them have a larger extent, and sometimes a brighter tint, of rufous on the nape and sides of the neck, and also more decidedly rufous foreheads.

Generally speaking, the adult females of *F. babylonicus* exhibit a slightly darker tint of grey on the upper surface than the males, and some adult females are more rufous on the under surface than any of the males that I have examined. Such a female is well represented in the plate of this Falcon given in Gould's 'Birds of Asia.' The adult females of this species are also more cross-barred with dark lines on the under tail-coverts than is the case with the adult males.

The less rufous adult females of *F. babylonicus* greatly resemble in colouring the most rufous adult females of *F. punicus*, but the males of these two species resemble each other much less closely than do the females*.

I may here remark that when *F. babylonicus* first assumes the adult plumage, the interscapular feathers, especially in the males, are edged with a rather dull rufous brown, which disappears as the bird advances in age; also that the transverse bars on the basal portion of the tail, which are usually somewhat strongly marked when the bird first attains the adult dress, gradually become obsolete and disappear more or less completely in the course of subsequent years.

In the P. Z. S. for 1876, pl. xxiii., a figure is given of a male Falcon which was shot in the Etawah district of Northern India by the late Mr. Andrew Anderson, who referred it to *F. babylonicus*, with which identification I concurred; but Mr. Hume, in 'Stray Feathers' for 1877, p. 140, expressed his opinion that the bird was too small for *F. babylonicus*, and that it should have been referred to *F. barbarus*. In deference to this opinion, and considering that Mr. Hume had enjoyed superior opportunities to either of ourselves for examining specimens of *F. babylonicus*, we acceded to his view, and expressed our concurrence with it in the P. Z. S. 1878, p. 2; but after examining with some care the series of these Falcons now preserved in the British Museum, I have reverted to my original opinion, and believe that Mr. Anderson's Falcon, now in the Norwich Museum, and several other Indian Falcons which Mr. Hume referred to *F. barbarus* (in which I followed him in 'The Ibis,' 1882, pp. 311, 312) are, in fact, males of *F. babylonicus*, my present impression being that the true *F. barbarus* does not extend its range so far eastward as India.

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* For a detailed description of several adult males and females of *Falco punicus*, see 'The Ibis' for 1882, pp. 313 to 321.

Falco babylonicus, on the contrary, appears to be a regular winter visitor to Northern India, and especially to the north-western portions of that country.

Of the Indian examples of this Falcon that I have examined, five are recorded as having been obtained in November, six in December, eight in January, two in February, and two in March, of which last-named specimens one was an immature male, shot by Col. E. A. Butler at Hyderabad, in Sind, on 9th March, 1878, and the other an immature female, obtained at Peshawur on 31st March, 1869. The earliest autumnal example in the series is an adult male shot by Mr. Doig at Ahmedabad, Guzerat, on 5th November, 1885.

The following dates are recorded of specimens of *Falco babylonicus* collected beyond the Indian frontier, and now preserved in the British Museum:—An adult female killed near Kelat, in October 1876; an adult female obtained by Sir O. St. John at Kandahar, 14th February, 1871; an adult female obtained at Samarcand, 5th March; an adult female purchased by Dr. Scully at Yarkand, 6th March, 1875; an immature male obtained by Dr. Scully at Gulgun Shah, Eastern Turkestan, 27th August, 1875. The last and two young females (one from Kashgar, marked 13th December, 1874, and the other from Yarkand, marked 26th February, 1875) were apparently procured alive by Dr. Scully, probably having been brought up from the nest; and Dr. Scully, referring to these specimens in 'Stray Feathers' for 1876, p. 118 (under the name of *F. barbarus*), remarks, "this Falcon is said to inhabit the hills of Kizil-tagh and Kugiar, and to breed there in summer."

The most western Asiatic specimen of *F. babylonicus* that I have seen is the female in change from immature to adult dress, which was procured long ago in Babylonia by Commander Jones, and which suggested the specific name that I subsequently proposed for this Falcon; but it is probable that *Falco babylonicus* is also sometimes found, though very rarely, so far west as North-eastern Africa. The Norwich

Museum contains an adult female purchased from M. Parzudaki, of Paris, who asserted that it was obtained in Abyssinia; and I am also now disposed to think that the Nubian Falcon in the British Museum, which I referred (P. Z. S. 1878, p. 2) to *F. barbarus*, is in reality a male in the second year's plumage of *F. babylonicus**.

With regard to the western range of *F. babylonicus*, I may also refer to the translation by Mr. Dresser in 'The Ibis,' 1875, pp. 106, 107, of some valuable notes by the late Prof. Severtzoff as to the breeding of this species in Turkestan; but the supposed "young male" from Chimkent there mentioned would seem, by its wing-measurement, either to have been incorrectly sexed, or to be an immature example of some allied species. In the same article Severtzoff records a specimen taken in Persia and two "taken from the nest on an island in the Volga."

The following measurements have been taken by myself from Falcons which I believe to be referable to *F. babylonicus*, and which have been marked as males by the collectors; they are all adult birds, and all preserved in the British Museum at South Kensington, except where I have mentioned the contrary:—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
From Eastern Narra, Sind, collected by Mr. Doig (immature in change)	10·85	5·75	1·75	1·85
From Hyderabad, Sind, collected by Col. Butler	10·95	5·50	1·75	1·80
From Eastern Narra, Sind, collected by Mr. Doig	11·00	5·40	1·70	1·70
From Cutch, collected by Dr. Stoliczka	11·15	5·50	1·70	1·70
From Eastern Narra, Sind, collected by Mr. Doig	11·25	5·25	1·70	1·75
From Hyderabad, Sind, collected by Col. Butler	11·25	5·50	1·70	1·90
From Hyderabad, Sind, collected by Col. Butler (immature in change)	11·25	5·75	1·70	1·80

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* This specimen measures as under:—Wing 11·15 inches, tail 5·40, tarsus 1·65, middle toe *s. u.* 1·80.

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
From Gulgun Shah, Eastern Turkestan, collected by Dr. Scully (immature)	11·25	5·70	1·80	1·80
From Eastern Narra, Sind, collected by Mr. Doig	11·50	5·45	1·75	1·70
From Etawah, collected by Mr. Anderson (Norwich Museum)*......	11·50	6·00	1·70	1·90
From Ahmedabad, Guzerat, collected by Mr. Doig, and presented by him to the Norwich Museum	11·50	5·90	1·80	1·90

The subjoined measurements I have taken from specimens in the British Museum, which I believe to be males of *F. babylonicus,* but of which the sex was not recorded by the collectors:—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
From Kurachi, collected by Col. Butler (immature in change)	10·90	5·85	1·80	1·80
From Arung, near Raipur, Central Provinces, collected by Mr. Blewitt (immature in change)	11·05	5·70	1·75	1·70
From Delhi, collected by Mr. Hume (immature in change)	11·15	5·55	1·70	1·70
From Delhi, collected by Mr. Hume (immature in change)	11·20	5·65	1·70	1·75
From Eastern Narra, Sind, collected by Mr. Doig (adult)	11·25	5·40	1·70	1·70
From Guzerat, Sind, collected by Mr. Doig (adult)	11·35	5·50	1·70	1·70

I must also refer to a specimen which has much perplexed me, and which is contained in the collection presented by Mr. Hume to the British Museum. This Falcon was considered by Mr. Hume to be a female of *F. barbarus*; it was obtained by Mr. F. R. Blewitt in the Nursingpoor district of the Indian Central provinces on 16th December, 1869, and agrees in coloration with the most fully adult males (as I conceive them to be) of *F. babylonicus,* but is a slightly larger bird.

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* As to some discrepancy between Mr. Anderson's measurements of his specimen and my own, see 'The Ibis,' 1882, p. 311 (note).

Elaborate measurements of this specimen, taken from it whilst in the flesh, are quoted by Mr. Hume in 'Stray Feathers,' vol. i. p. 21, and from these I extract the following for comparison with others above recorded, viz. :—wing 11·40 inches, tail 6·40, tarsus 1·80, middle toe *s. u.* 1·80. My own measurements, taken from this specimen in the skin, give a slightly different result, viz. :—wing 11·70, tail 5·60, tarsus 2, middle toe *s. u.* 1·90.

Mr. Hume, writing (*loc. cit.*) of this Falcon, and of the male obtained by Dr. Stoliczka in Cutch, of which I have already given my measurements, states that he at first referred both of them to *F. babylonicus,* but subsequently became convinced that they were a male and female of *F. barbarus,* and adds "in both specimens the sexes were ascertained and recorded by, I need not say, careful observers."

Notwithstanding the strong evidence of Mr. Hume's statement, I cannot but suspect that some accidental error may have occurred in determining the sex of the supposed female specimen, and that in reality it is not a female of *F. barbarus,* but an unusually large and very adult male of *F. babylonicus,* and I conceive that some confirmation of this suspicion arises from the circumstance that on the ticket attached to this specimen, presumably by the collector, a blank space was left for the sex, which has been filled with the word "female" in a different handwriting from the rest of the ticket, and with a different ink, red instead of black.

The following are measurements which I have taken from specimens of *F. babylonicus* which were marked as females either by the collector or the taxidermist employed; except where otherwise described, the birds are all adult, and all preserved in the British Museum :—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
Purchased at Kashan by Dr. Scully (immature)	Imp.	Imp.	1·70	1·90
Kandahar, collected by Sir O. St. John (immature in change)	Imp.	6·75	2·00	2·05
Kashgar, collected by Dr. Scully (immature, wings slightly imperfect)	11·80	6·10	1·90	1·95
Himalayas, collected by Dr. Jerdon, in possession of Canon Tristram (immature)	12·20	5·65	1·85	1·90
Punjaub, collected by Dr. Jerdon, in possession of Major Wardlaw Ramsay (immature)	12·30	..	..	2·00
East Narra, Sind, collected by Mr. Doig (immature in change)	12·35	6·50	1·90	2·10
Kandahar, collected by Sir O. St. John (immature in change)	12·40	6·55	1·90	2·00
Peshawar, collected by Mr. Hume (immature in change)	12·45	6·80	2·00	2·05
Dado, Sind, collected by Mr. Doig (immature in change)	12·50	6·65	1·85	2·10
Babylonia, collected by Commander Jones (immature in change)	12·70	6·65	2·00	2·05
India, collected by Col. Delmé Radcliffe, in possession of Lord Lilford	12·70	6·50	2·00	2·10
Samarcand, presented to Brit. Mus. by Mr. Seebohm	12·70	6·30	2·10	1·90
Etawah District, collected by Mr. Brooks	12·70	6·50	1·90	2·00
Eastern Narra, Sind, collected by Mr. Doig	12·90	6·65	1·80	2·10
Allygurgh, N.W. India, collected by Mr. Brooks	13·00	6·50	1·90	1·95
Umballah, India, collected by Dr. Scott, in possession of Major Wardlaw Ramsay	13·10	..	2·00	2·05
Yarkand, collected by Dr. Scully	13·15	6·80	2·15	2·00
Tempeer, Lower Sind, collected by Mr. Hume	13·15	6·90	2·00	2·10
Attok, India, collected by Mr. Hume (immature)	13·15	7·30	1·90	2·10
Hyderabad, Sind, collected by Col. Butler (immature in change)	13·20	6·80	2·00	2·20

The following are measurements which I have taken from presumed females of *F. babylonicus,* the sex of which has not been recorded; these specimens (except where the reverse is mentioned) are all adult and preserved in the British Museum:—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
Etawah, District, collected by Mr. Hume (immature in change)	12·20	6·60	2·00	2·10
Khelat, collected by Mr. Hume	12·40	6·40	1·90	2·10
Delhi, collected by Mr. Hume (immature)	12·60	6·55	2·00	2·00
Umritzer, the Punjaub, in the possession of Major Wardlaw Ramsay	12·65	..	2·00	2·10
Oudh, collected by Col. L'Estrange, in the possession of Lord Lilford..	12·80	6·70	2·00	2·05
Locality unknown, preserved in Norwich Museum..................	12·90	6·50	2·00	2·05
Guzerat, collected by Mr. Doig	12·90	6·90	2·10	2·10
Eastern Narra, Sind, collected by Mr. Doig	12·95	6·30	1·90	2·10
Oudh (type specimen), collected by Col. Irby and preserved in Norwich Museum	13·20	7·00	1·95	1·95
Said to be from Abyssinia, preserved in Norwich Museum............	13·30	6·50	2·00	1·95
Punjaub, collected by Mr. Hume ..	13·30	7·10	2·10	2·00
Nepal, collected by Mr. Hodgson ..	13·35	7·00	1·90	1·90

I add, for comparison, the following measurements of adult, or nearly adult, specimens of *Falco barbarus,* the sex of which has been recorded by the collectors.

These measurements have been taken by myself from the specimens in question, which have all been obtained in Northern Africa; but additional carefully sexed African examples of *F. barbarus* are much to be desired, for the sake of supplying a larger series for comparison than exists at present.

Males.

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
Tangier (Favier), in Norwich Museum	10·95	5·55	1·70	1·90
Sakkara, Egypt, in Norwich Museum	11·00	5·50	1·70	1·80
El Kab, Egypt, shot by and in the collection of Capt. Shelley	11·20	5·45	1·70	1·80

Females.

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
Kef, Boudjato, Eastern Atlas (*vide* 'The Ibis,' 1859, p. 187), in Norwich Museum	11·20	5·60	1·60	1·80
Egypt, obtained by Mr. W. C. B. Medlycott, in Norwich Museum ..	11·15	5·60	1·70	1·70

In conclusion, I may mention two adult Falcons from Nepal, which were presented by Mr. Hodgson to the British Museum, and which, notwithstanding the very eastern locality where they were obtained, I can only refer to *Falco punicus*. The smaller of these specimens, which I believe to be a male, is entered at p. 387 of the Museum Catalogue under the head of *Falco barbarus*, and the larger, which is presumably a female, is one of the two specimens entered at p. 389 under the title of *Falco babylonicus*, to which species the other specimen from Nepal, also thus entered, does appear to me really to belong. The following are my measurements of these Falcons:—

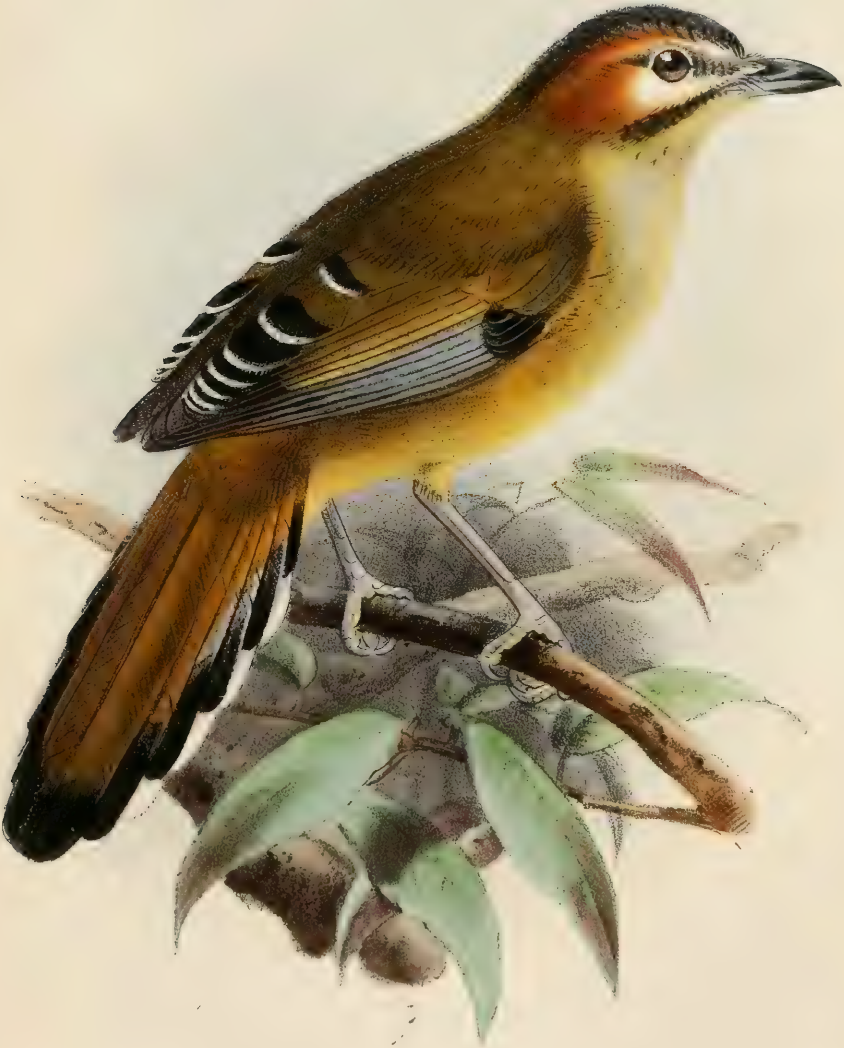
	Wing. in.	Tail. in.	Tarsus. in.	Middle toe, *s. u.* in.
Presumed ♂	11·50	5·80	1·70	1·85
Presumed ♀	13·30	6·00	1·70	2·04

XVI.—*On a new Species of* Trochalopteron *from China.*

By F. W. Styan, F.Z.S.

(Plate VI.)

In 1885 I purchased in Hankow two living specimens of a *Trochalopteron* which appears to be undescribed, and for which I propose the name of *T. cinereiceps*. Its nearest ally is *T. cineraceum* of Godwin-Austen (P. Z. S. 1874, p. 45, pl. xi.),



G. Keulemans lith.

Hanhart imp.

TROCHALOPTERON CINEREICEPS

from Munipur, India, from which it differs in its more olive and less grey upper parts, in having a dusky brownish-grey cap to the head instead of black, and in its rufous ear-coverts and white on the cheeks. The underparts in the two species are practically identical. The following is the description :—

TROCHALOPTERON CINEREICEPS, sp. n. (Plate VI.)

Upper parts olive-brown, brighter on the rump, and merging gradually into dusky brownish grey on the top of the head, the feathers of which are faintly margined with black. Wing-coverts like the back, primary-coverts black, bastard wing lavender-grey. Primaries, outer web lavender-grey, which in the last three fades into olive-brown at the base, inner web blackish. Secondaries and tertiaries olive-brown like the back, inner web blackish, a broad black bar with a narrow white tip terminates each feather. Tail, two central feathers olive-brown like the back, terminated by a black bar with a faintly visible white tip. The remaining rectrices have a broad white tip, a black subterminal bar, then a rather faintly marked lavender bar, more conspicuous in the outermost, which fades softly into olive-brown. Head below the dusky grey of the vertex is an olive-brown, eyebrow merging into rufous on the ear-coverts. Below the eye is a white patch succeeded by a black moustache. Lores black, above which a small white patch. Under surface, as far as breast, isabelline buff, paler on the throat; abdomen, flanks, under wing-coverts, and under tail-coverts ochraceous buff. Legs and feet yellowish brown, beak ditto, upper mandible dark.

Beak, along culmen $\frac{7}{8}$ inch, to gape 1 inch; wing $3\frac{1}{2}$ inches; tarsus $1\frac{1}{4}$ inch; tail $3\frac{3}{4}$ inches.

The two specimens I procured from a dealer who regularly imports live birds to Hankow from Western China, having an agent at Ichang, who collects them and forwards them thence by steamer down the Yangtse. He said they came from Yunnan. In addition to these there is a specimen in the Shanghai Museum, with no name or history attached, which was probably procured from the same source. All three specimens are identical in appearance, and one is still alive in my aviary in Shanghai. It constantly utters a soft plaintive call of three or four notes, and warbles in a sort of undertone, like others of this family; but I never heard it sing with a rich full tone like *T. canorum*, some of which are its companions.

XVII.—*On* Phasianus colchicus *and its Allies.*

By Henry Seebohm.

There is a great deal of truth in the old saw which says that "it is an ill wind that blows nobody any good." England and Russia quarrelled over the line which divides Afghanistan from Turkestan. Some millions sterling were spent in consequence, a deputation from the two countries met in the basin of the Murghab, and discovered a new subspecies of Pheasant. Ornithologists ought to be the last to quote "parturiunt montes," and will agree with me that the English proverb is much more to the point. Any discovery which throws light upon the difficult question of the inter-relationship of the Pheasants is valuable.

The fact that all the true Pheasants interbreed freely with each other and produce fertile offspring, may be accepted as absolute proof that they are only subspecifically distinct from each other. Like all other subspecies, they only exist upon sufferance. The local races appear to be distinct enough, but they only retain their distinctive characters so long as they are isolated from each other. The moment they are brought into contact they begin to interbreed; crosses of every kind rapidly appear, and in a comparatively short time the swamping effects of interbreeding reduce the two or more local races which have been brought into contact to a single and uniform intermediate race. Such swamping effects of interbreeding have practically stamped out in the British Islands the two very different-looking races of Pheasants which were introduced into them—*Phasianus colchicus*, from Asia Minor, and *Phasianus torquatus* from China. The Pheasant of the British Islands is, with very rare exceptions, only a mongrel between these two races, but, it must be admitted, a very healthy and fertile one.

The difference between these two races is by no means small, and is remarkably well defined geographically. *Phasianus colchicus* and its allied sub-races are only found west of the meridian of Calcutta; whereas *P. torquatus* and its allies are only found east of that line (about long. 90° E.).

The two races may be contrasted as follows:—

P. COLCHICUS.	P. TORQUATUS.
Predominant colour of rump, upper tail-coverts and tail red.	Predominant colour of rump, upper tail-coverts, and tail green and lavender-grey.
Cross-bars on tail-feathers narrow.	Cross-bars on tail-feathers broad.
Ground-colour of mantle red.	Ground-colour of mantle buff.
Crown green.	Crown greyish.
Wing-coverts white or red.	Wing-coverts lavender-grey.

While the true Pheasants may be divided longitudinally into these two races, they may also be divided latitudinally into two other races. A line drawn from Astrakan through the valley of the Amu-Darya, following the watershed of the Pamir and Thian-shan ranges, crossing the desert of Gobi and Thibet, entering China north of Sechuen, and passing southwards east of that province, divides the Ringed Pheasants from those which have no ring—the former lying north of the line, and the latter south of it.

Confining our attention to the western races, it may be interesting to trace their various geographical ranges, and point out the characters which distinguish one race from another.

Typical examples of the six races of *P. colchicus* may be distinguished as follows:—

No green on the centre of the breast or on the belly.	*colchicus*	Wing-coverts reddish brown.
	persicus.	
	principalis	Feathers of mantle broadly edged with green.
	chrysomelas	
	shawi.	
	mongolicus	A white collar round the back and sides of neck.

PHASIANUS COLCHICUS.

The range of the Common Pheasant, irrespective of the countries where it has been artificially introduced, may be comprised in a triangle, of which Smyrna may be regarded as the western apex, and the western shore of the Caspian, from Astrakan almost to Astrabad, as the base.

P. colchicus scarcely differs from *P. persicus,* except that its wing-coverts are redder; the much whiter wing-coverts of its Trans-Caspian ally being caused, probably, by the difference in the rainfall of the area of its distribution compared with that of its ally. There is also a difference in the colour of the rump and upper tail-coverts, which are brick-red in the western form and purple-lake in the eastern one.

In speaking of the colours of the plumage of Pheasants, it is of the utmost importance to remember that most of the colours are lustrous or metallic, and consequently vary with the direction of the light. If a skin of *P. mongolicus* be placed between the observer and the light, the mantle appears to be brick-red; on the other hand, if the observer stand between the light and the bird, the mantle of the latter appears to be green. Under a similar change of position the colour of the rump and upper tail-coverts of *P. persicus* changes from brick-red to purple-lake, and the spots on the underparts of *P. chrysomelas* pass from an almost peacock-blue to a nearly emerald-green. The colour of some other parts, as the breast of *P. principalis* or the mantle of *P. chrysomelas,* only varies slightly in intensity with the change of position.

PHASIANUS PERSICUS.

This Pheasant is only known from the valley of the Attreck river.

It is an intermediate form between *P. colchicus* and *P. principalis,* having the narrow margins of the feathers of the underparts of the former, and the whiter wing-coverts of the latter, and differing from both in having the rump and upper tail-coverts suffused with purple-lake when the light falls upon the bird from the back of the observer. In none of these three races can any green be detected on the centre of the breast and belly in any light.

PHASIANUS PRINCIPALIS.

This Pheasant is only known from the basin of the Murghab river.

It is an intermediate form between *P. persicus* and *P. shawi*. It differs from the former in having the rump and upper tail-coverts glossed with brick-red instead of purple-lake, and the dark margins and tips of the feathers both of the upper and underparts broader and more lustrous. From the latter it differs in having less green below the neck on the upper or underparts. On the centre of the breast and belly no trace of green can be detected, even when the light falls upon the bird from the back of the observer. Some examples of *P. shawi* almost, but apparently never quite, lose this trace of green.

PHASIANUS SHAWI.

This Pheasant is only known from the basin of the Kashgar river, in the west of Chinese Turkestan. It is very nearly allied to *P. principalis*, and is only prevented from interbreeding with it by the impassable plateau of the Pamir, which effectually separates the two races. Typical examples of each are most easily distinguished by the colour of the margins of the feathers of the breast, especially the lower breast, which is red or purple in the western race and green in the eastern race. Occasionally, however, some of the Kashgar Pheasants lose almost all trace of green on the underparts below the neck; but the much narrower dark margins of the feathers, especially on the mantle and flanks, prevent them from being mistaken for *P. principalis*.

But though *P. shawi* is prevented from interbreeding with *P. principalis* or with *P. chrysomelas* by its geographical position, it interbreeds with *P. mongolicus*, or, to speak more accurately, with the race of that subspecies inhabiting the basin of Lake Ebi. The strain of the latter species shows itself in a more or less imperfect white collar and in the greater amount of green on the underparts. One of these mongrels was described by Mr. D. G. Elliot (Proc. Zool. Soc. 1870, p. 404) as *P. insignis*, and figured as a good species in his monograph of the Phasianidæ, and afterwards erroneously identified with *P. chrysomelas* of Severtzow ('Stray Feathers,' 1877, p. 198) by that author, although Dr. Scully, a distinguished Indian ornithologist, as remarkable for the excellence of his field-work as for the accuracy of his literary labour, had pointed out ('Stray Feathers,' 1875, p. 433) that the two forms completely intergrade. Severtzow's *P. chrysomelas* was, unfortunately, described from a mongrel between the true *P. chrysomelas* (of which there is a fine example in the British Museum, with no trace of a white collar) and *P. mongolicus*. It is probable that every Pheasant interbreeds with its nearest allies wherever the respective areas of distribution meet; but the mongrel between *P. mongolicus* and *P. chrysomelas* is always distinguishable from the mongrel between *P. mongolicus* and *P. shawi* by the margins of the feathers of the mantle, which are broad and green in the former, and very narrow and black in the latter. The points in which *P. insignis* is alleged by Elliot to otherwise agree with *P. chrysomelas* and to differ from *P. shawi* were probably individual peculiarities, as I can detect no trace of any of them in the large series which I have examined.

The proportion of mongrels to typical examples in the basin of the Kashgar appears to be from 10 to 20 per cent.

PHASIANUS CHRYSOMELAS.

This Pheasant is only known from the lower valley of the Amu-Darya.

It is remarkable for the rich metallic green margins of the feathers of the mantle and tips of those of the underparts. When thoroughbred it has no ring round the neck, but the majority of examples show a more or less perfect approach to the interrupted ring of *P. mongolicus*. It is not known that intermediate examples between *P. chrysomelas* and *P. principalis* occur, though it is possible that *P. komarovi* of Bogdanow*, from the Kopet-Dagh mountains, may prove to be one of them.

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* [Bull. Acad. Sci. St. Pétersb. xxx. p. 356. See Notices, *infra*.—EDD.]

PHASIANUS MOGNOLICUS.

The Pheasant which bears this name appears to range from the lower valley of the Syr-Darya, across the basin of Lake Balkash, as far east as Lake Saissan and the valley of the Black Irtish. I can find no evidence of the occurrence in any part of Mongolia of thoroughbred examples of this Pheasant.

In some respects it is intermediate between *P. chrysomelas* and *P. torquatus,* resembling the latter in having a ring round the neck (though it does not quite meet in front), and in having a great deal of green on its rump and upper tail-coverts. It can scarcely be regarded as a cross between the two, as in the colour of its mantle and wing-coverts, and in the pattern of its tail, it agrees with the former, and shows no inclination to approach the latter.

There can be little doubt, however, that it interbreeds both with *P. chrysomelas* and *P. shawi.* The outlying colony in the basin of Lake Ebi shows so much strain of *P. shawi* that Severtzow described it as a new species under the name of *P. semitorquatus.* Examples with traces of a white ring are very common in collections of *P. chrysomelas,* and far from uncommon in series of *P. shawi.*

XVIII.—*Notes on the Birds of the Loo-choo Islands.*

By HENRY SEEBOHM.

(Plate VII.)

THE Loo-choo, Liu-kiu, or Ryu-kyu Islands lie between Japan and Formosa, and enjoy a climate of remarkable equability. The summer is not too hot to permit the growth of wheat, and the winter is not too cold for the cultivation of sugar-cane and pine-apples. From an ornithological point of view these islands are said to rival Heligoland as a station where migration may be seen on an extended scale.

By the kind assistance of Mr. H. Pryer, to whom we are indebted for much valuable information respecting the birds of Japan, I am enabled to produce a preliminary list—not of the migrants which pass the Loo-Choo Islands in such countless numbers, but of the resident birds, amongst which appear to be two new to science. These islands were visited in February and March by Mr. Namiye. In May and June Mr. Pryer was there himself, and his collector remained until the end of August.

The following list of birds obtained on these islands has been furnished me by Mr. Pryer; those specimens which have passed through my hands are specially mentioned.

1. SCOPS SEMITORQUES.

2. NINOX JAPONICUS.

3. FRINGILLA SPINUS.

4. PASSER MONTANUS.

Mr. Pryer has sent a skin, which appears to me to be that of the Tree Sparrow, a bird of the year; but the Loo-choo bird has been described as distinct under the name of *Passer saturatus* (Stejneger, Pr. U.S. Nat. Mus. viii. p. 19).

5. EMBERIZA PERSONATA.

Mr. Pryer says this was the only species of Bunting seen on these islands.

6. MERULA NAUMANNI.

7. MERULA PALLIDA.

8. MERULA CHRYSOLAUS.

9. HYPSIPETES AMAUROTIS.

Mr. Pryer remarks that an example of the Red-eared Bulbul from the Loo-choo Islands agrees with those from Ogasawara, or Bonin Island, in being darker than Japanese birds. The Bonin-Island bird is certainly larger, as the following measurements will prove:—

	Ningpo.	Yokohama.	Bonin.
Wing	5·0	4·7	5·3
Tail	4·6	4·4	4·8
Culmen	1·2	1·1	1·4
Tarsus	0·85	0·9	0·95

10. MONTICOLA SOLITARIA.

11. TARSIGER CYANURUS.

12. ERITHACUS KOMADORI.

Mr. Pryer, or, to be strictly accurate, his friend Mr. Namiye, has solved the mystery of the so-called 'Corean Robin.' It appears that, after all, this bird, as remarkable for the gaiety of its plumage as for the melody of its song, does not come from the Corea. In Japan it is only known as a very expensive cage-bird, but about twenty miles from the town of Shiuri, on the largest of the Loo-choo Islands, and on the island of Amami, Oho-Shima, it is a common species. As Mr. Jouy saw no trace of this bird during his three years' residence in the Corea, it should for the future be called the Loo-choo Robin.

13. CISTICOLA BRUNNEICEPS.

The skin of a Fantail Warbler from Loo-choo, dated 2nd June, differs from any that I have seen before. This is an extreme form of the eastern or tropical race, which may possibly have a right to the name *Cisticola schœnicola brunneiceps.* In breeding-plumage, examples from South Africa, the plains of India, Ceylon, Japan, and Formosa approach very near it, but it differs from European examples in the colour of the tail. The black subterminal band is separated from the black basal half by brownish buff on both webs of the two central tail-feathers and on the outer webs of the rest, and by chestnut-buff on the inner webs of the latter. This chestnut or buff band across the tail is considerably more than half an inch wide: it is absent in winter plumage, but examples showing more or less of it are found in breeding birds in all the tropical countries where it is found, but never in the colder portions of its range. Under these circumstances it must be regarded as subspecifically distinct from *C. schœnicola.*

In this case the Loo-choo species is decidedly not Malayan in character. *C. exilis* has no trace whatever of the buff band across the tail. Its range extends northwards from Australia and many of the islands of the Malay archipelago to the Malay peninsula and the Philippines, inosculating with that of its more western ally in Burma, Assam, and Formosa.

14. Motacilla sulphurea.

15. Parus ater.

16. Parus minor.

17. Parus varius.

18. Ampelis phœnicoptera.

19. Pericrocotus cantonensis?

Mr. Pryer remarks that he obtained on the islands a *Pericrocotus* smaller and darker than *P. cinereus*; but as he has not sent a skin, the determination of the species must for the present remain doubtful.

20. Corvus japonensis?

Mr. Pryer says that this Crow resembles the Carrion Crow, but adds, "beak much larger than ordinary, but short in the primaries." He describes it as not at all common on the islands.

21. Hirundo javanica?

Mr. Namiye obtained an example of a "small and dark" Swallow, which may possibly prove to belong to this species, which has occurred in the Philippine Islands. Mr. Pryer says that it is not found in Japan, but has not sent a skin.

22. Zosterops japonica.

Mr. Pryer says that, "next to the Sparrow, this is the commonest bird found on the island."

23. Halcyon coromanda.

The Ruddy Kingfisher must be regarded as a decidedly Malay element in the fauna of the Loo-choo Islands. It has found its way up through Burma to the Himalayas, and through the Philippine Islands to Formosa and Japan, but is not known to have occurred in China.

24. Alcedo ispida bengalensis.

An example sent by Mr. Pryer agrees in every respect with examples of the small eastern race of the Common Kingfisher from China and Japan.

25. Iyngipicus kizuki nigrescens, subsp. n.

The Woodpeckers are specially interesting because so many of them vary in colour and size in different areas of their distribution, the variation being certainly coincident with, and probably caused by, difference of climate. The extreme of climatic variation is doubtless reached in our two British species of Spotted Woodpecker, *Picus major* and *P. minor*, but it is also very marked in the more typical genus *Iyngipicus*. *I. pygmæus* is a resident in the Himalayas. In Formosa and Hainan it is represented by a slightly larger bird, with more white on the plumage, *I. pygmæus kaleensis*. In China it has increased in whiteness and slightly in size, and becomes *I. pygmæus scintilliceps*; and in South-eastern Siberia the maximum both of size and whiteness is reached in *I. pygmæus doerriesi*. It is difficult to say which error ought to be more carefully avoided—the exaggeration of the differences, so as to make these climatic races into distinct species, or the depreciation of them to the extent of confusing the climatic races together as one species.

The Japanese species of *Iyngipicus* appears to have become differentiated completely from *I. pygmæus* and its conspecific forms. It agrees with that species in having black upper tail-coverts and central tail-feathers, but it differs from it in having the white superciliary stripe separated from the white sides of the neck. It is, however, itself subject to climatic influence, and may be subdivided into at least three climatic races. *Iyngipicus kizuki* was originally described from Kyu-lyu, the most southern of the three Japanese islands. It is a small bird, with a brown head and not very much white on the upper parts; for example, the outer webs of the three longest primaries have five small white spots on each. In the Central and North Island it is represented by a larger bird, with a grey head and much more white on the upper parts; for example, the white spots on the outer webs of the three longest primaries are larger and are six in number. It is difficult to regard *I. kizuki seebohmi* as more than subspecifically distinct from its nearest ally, especially as the South-east Siberian form of this species is a still larger bird. I am now, thanks to Mr. Pryer's kindness, confirmed in this opinion by the sight of the opposite extreme of the climatic races of this species. An example from Naha, one of the Loo-choo Islands, is smaller and darker than any which I have seen from Japan; the head is nearly black, and there are only four very small white spots on the outer webs of each of the three longest primaries. I propose to call it *I. nigrescens*, or, if its full title be given, *I. kizuki nigrescens*. There can be little doubt that in a large series from both localities some examples would be absolutely indistinguishable. In a series of sixteen examples in Mr. Hargitt's collection and my own, those from the North Island of Japan are indistinguishable from those from the Middle Island, whilst those from the Southern Island are conspicuously darker. On the other hand, Dr. Stejneger (Pr. U.S. Nat. Mus. 1886, p. 121) regards a series, apparently of nine skins, from the Middle and Southern Islands as practically the same, while those from the North Island are treated as specifically distinct. It is, of course, possible that Dr. Stejneger is right, and that all our skins from the Middle Island are those of winter migrants from Yesso.

26. Picus noguchii, sp. n. (Plate VII.)

This entirely new species, which I have named according to Mr. Pryer's instructions, is unquestionably the most interesting bird in the collection. It is a young bird which has partly completed its moult into the plumage of the adult.

The general colour of the upper parts is black, each feather on the forehead, crown, and nape tipped with crimson. All the small feathers of the upper parts, except the wing-coverts, are obscurely tipped with dull crimson. There is a white spot on each web of all the quills at the base, and, in addition, a white spot on the outer web of the third to the sixth primaries, and two white spots on the inner webs of the third to the eighth primaries. The tail is uniform black. The sides of the head, the chin, and the throat are brown, shading into nearly black on the breast and the rest of the underparts. The old feathers on the underparts below the throat are tipped with orange-crimson, but the new feathers

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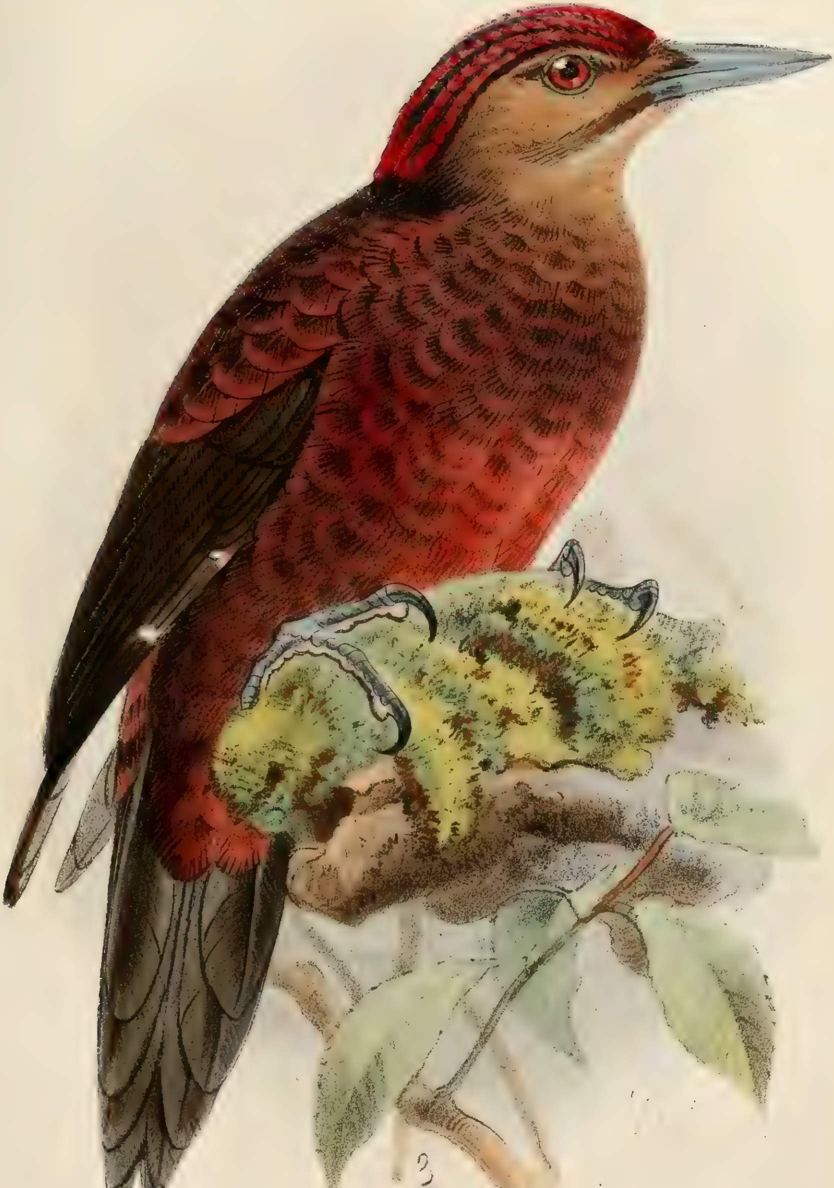

$\frac{3}{4}$

G.Keulemans lith.

Hanhart imp.

PICUS NOGUCHII.

appear to be a rich maroon-colour. Length of wing 5·7 inches, tail 3·8, culmen 1·25, tarsus 1·2, hind toes (without claw) 0·9 and 0·4, fore toes 0·75 and 0·6.

In the shape and pale colour of its bill, and in the smallness of its nasal bristles, this species resembles *Venilia*, *Xylolepes*, and some other of the pseudo-genera of Woodpeckers, and will probably be included in the genus which will absorb them when the genera of Woodpeckers are intelligently studied.

27. CARPOPHAGA IANTHINA.

Mr. Pryer remarks that one of the specimens has a large white patch between the shoulders.

28. TRERON SIEBOLDI.

29. TURTUR ORIENTALIS.

An example sent by Mr. Pryer from the Loo-choo Islands agrees with others from China and Japan. This species is a summer visitor to South-eastern Siberia and the North Island of Japan, wintering in South China and Formosa. In the other Japanese islands it is a resident; and as the skin sent from the Loo-choo Islands is dated 31st May, the species probably remains the whole year in that locality. It has not occurred on the Philippine Islands, but its range extends to Burma and Cochin China.

30. TURNIX OCELLATA.

A skin of a "Bustard Quail," as Indian sportsmen call it, is undoubtedly the Indo-Malayan Hemipode. This is another instance of the Malayan affinities of the fauna of the Loo-choo Islands. None of the mainland Chinese Hemipodes have black throats, and no Hemipode is found in Japan. Compared with *T. plumbipes* in the Hume collection from Salangore, in the Malay peninsula, the Loo-choo bird is a shade redder in the upper parts, and a trifle less so on the underparts.

The specimen sent is not sexed, but, having a black throat, it is presumably a female. Swinhoe states (P. Z. S. 1871, p. 401) that the female of his *T. rostrata* has a black throat in summer; but there are no skins dating between March and December in his collection. Unfortunately the Tweeddale collection is at present inaccessible, but it seems probable that when the necessary material falls into the hands of a competent ornithologist, a great slaughter of species must take place. So far as I have been able to ascertain from the limited material at my disposal, it appears that the Indo-Malayan Hemipode was originally described by Scopoli in 1786, from an example figured by Sonnerat, obtained in the island of Luzon, where it was afterwards found by Mr. Everett, Lord Tweeddale's collector in the Philippine Islands. Scopoli, with the fatal genius for blundering so often found in compilers, assumed that Sonnerat did not know a Quail from an Oriole, and named the species *Oriolus ocellatus*. In 1823 Temminck rediscovered the species in a collection from Java, and named it *Hemipodius pugnax*. In India and Burma it has been described over and over again: in 1832 by Sykes as *Hemipodius taigoor*; in 1837 by Hodgson as *Hemipodius plumbipes*; and afterwards by Blyth, Eyton, and others under various names. In 1865 Swinhoe described it from Formosa as *Turnix rostrata*, and a further search will doubtless swell the list of synonyms considerably more—though it is possible that one or two of the names may be retained in a trinomial capacity, to indicate climatic races.

31. FULICA ATRA.

32. GALLINULA CHLOROPUS.

33. CHARADRIUS FULVUS.

The Eastern Golden Plover is probably only seen in spring and autumn on migration.

34. TOTANUS BREVIPES.

The example sent belongs to the Asiatic, and not to the American form of this species. The tarsus is scutellated at the back; the nasal groove extends for only half the length of the bill, and the belly is unspotted white. It is, of course, only seen on the Loo-choo Islands on migration.

35. ARDEA SACRA.

An example of a Reef Heron sent by Mr. Pryer does not differ from two skins from the Straits of Corea (Ibis, 1884, p. 176), and agrees with the description of the two Reef Herons from Japan in the Leyden Museum (Mus. Pays-Bas, *Ardea*, p. 28), except that in the dried skins the legs are slate-grey. It is remarkable that this bird is not recorded from any part of the Chinese coast, and only once from the Philippines (Lord Tweeddale, P. Z. S. 1877, p. 551). The white form of this species is not known to have occurred north of the Molucca Islands.

36. NYCTICORAX NYCTICORAX.

37. STERNA MELANAUCHEN.

The Black-naped Tern was found breeding on the coast of China near Amoy by Swinhoe, but an example sent by Pryer from the Loo-choo Islands extends its known range further north.

38. STERNA SINENSIS.

The White-shafted Ternlet, of which Mr. Pryer has sent home a skin, is said by him to be common on the Loo-choo Islands, arriving in spring and leaving in autumn. Swinhoe found it breeding on Formosa; but the Abbé David says that he observed it as far north as Mongolia, and it was probably this species which Radde found on the Amoor and mistook for *Sterna minuta*. I have already recorded it from Japan (Ibis, 1884, p. 32).

39. STERNA DOUGALLI.

Mr. Pryer has sent an adult example in breeding-plumage of the Roseate Tern, a species which has not previously been recorded from the North Pacific. As this bird is not known to have occurred in China or the Philippine Islands, it may be regarded as, to a certain extent, a Malay element in the Loo-choo fauna. Mr. Saunders identified the specimen.

40. DENDROCYGNA JAVANICA.

Mr. Pryer has sent two examples of the Lesser Whistling Teal, which his collector shot in a paddy-field, and said that the birds were abundant. This common Indian species is found throughout the Malay peninsula, and is also recorded from Sumatra, Java, and Borneo, but is not known in China. Mr. Pryer remarks that the insect fauna of the Loo-choo Islands is "almost entirely Malayan," so that we need scarcely try to account for the existence of this Duck by suggesting that it may have been introduced.

Now that the Loo-choo Islands have been proved to possess so many points of ornithological interest, it is to be hoped that they will be speedily explored. Dr. Guillemard, in his cruise of the 'Marchesa,' has drawn attention to the extreme good nature of the inhabitants, but he was not very successful in his ornithological researches on the islands. In the 'Proceedings of the Academy of Philadelphia,' 1862, p. 312, there is a list of twelve species of birds collected on the Loo-choo Islands in 1854 by the exploring expedition under Capt. Rodgers. Six of these have been obtained by Mr. Pryer. Four others are evidently migrants, namely:—

41. Ardea alba.

42. Numenius arquatus.

43. Totanus hypoleucus.

44. Fuligula marila.

Of the two remaining species obtained by Capt. Rogers,

45. Ardea grayi

may possibly be a resident, and

46. Columba intermedia

a more or less domesticated Pigeon, introduced in prehistoric times.

XIX.—*A List of the Birds of Portugal.*

By William C. Tait, Oporto.

[Continued from p. 96.]

46. Acredula irbii. "Rabilongo," "Megengro," "Fradinho," Coimbra.

This species was differentiated by Messrs. Sharpe and Dresser from skins obtained by Col. Irby in the south of Spain. Drs. Bocage and Carvalho had remarked that this bird did not agree with the description of *A. caudata* given by Linnæus. It has bred in a "coral" tree in my garden, and its habits seem to be the same as those of the northern form, *A. rosea,* found in the British Islands.

47. PARUS MAJOR, Linn. "Çedovem," "Pinta caldeira," "Fradisco," "Ferreiro," Oporto; "Megengro," Melres and Caldas d'Aregos; "Patachim," "Parachim," Douro; "Papa-abelhas," "Chincharavelha," Penafiel; "Passaro do linho," "Semeia linho," Estarreja; "Cachapim," Beja; "Chinchinim," Sta. Clara a Velha; "Caldeirinha," Quarteira, Algarve; "Ferreirinho," Redondella, Galicia, Spain.

Resident and abundant. This species begins to sing its peculiar note in February, and, according to the country people, seems to say "Semeia linho, semeia linho" (*i. e.,* "Sow flax, sow flax," indicating that the time has come for that seed). They believe that when the bird sings much it is a sign of an abundant harvest, and that it also says "Tudo-bem, tudo-bem" (*i. e.,* "All 's well, all 's well").

I have seen this bird tearing open with its bill the nests of the procession-caterpillar (*Cnethocampa pityocampa*) in the pine-trees and eating the larvæ. It is the only species which I have observed eating these caterpillars; other birds only take the web to build their nests with. The hairs of *Cnethocampa* are well known to be highly irritant to the human skin, and *P. major* must therefore have a strong throat, gizzard, and stomach.

48. PARUS ATER, Linn.

Resident and common in the pine-woods at the mouth of the Douro. Dr. Carvalho informs me that this species is rare in the neighbourhood of Coimbra, and Col. Irby did not meet with it near Gibraltar. I have known it to nest in a hole in a wall in my garden; but we are probably not far from the southern limit of its distribution.

49. PARUS CÆRULEUS, Linn. "Cedovem pequeno," Oporto;

"Furabogalhos," Penafiel; "Chincharavelha," Caldas do Gerez.

Common and resident; a pair nested in my garden-wall.

50. PARUS CRISTATUS, Linn.

Resident and common in the north of Portugal, chiefly in the pine-woods on the mountain-sides. A pair nested near Oporto in the hollow branch of an oak tree, from which I had previously taken the eggs of *Gecinus sharpii*. According to Dr. Carvalho it is not rare in the neighbourhood of Coimbra.

51. SITTA CÆSIA. "Trepadeira azul," Penafiel; "Carapito," Traz os Montes; "Alhorca," Melres; "Batoco," Abrantes.

Resident and common in some places, but very local; few are seen in the immediate neighbourhood of Oporto.

52. CERTHIA FAMILIARIS, Linn. "Trepadeira," Oporto; "Subideira," Cerva and Celorico de Balto; "Serigaita," Penafiel.

Resident and very common. Sings its few notes in January, February, and March. Having had no opportunity of comparing specimens, I do not know whether the variety of this country be *C. brachydactyla*, as is probable.

53. TICHODROMA MURARIA (Linn.).

Resident, but only twice observed. The first specimen obtained in Portugal was from the Serra do Zorro, near Coimbra, in the autumn of 1880, according to Dr. Manoel Paulino d'Oliveira; and Mr. Adolph Moller saw another in the Serra d'Estrella.

54. TROGLODYTES PARVULUS, Koch. "Carriça," all over Portugal.

Resident and abundant. I have heard this bird's song in every month of the year, but seldom during the cold months of November, December, and January, and less than usual during July and August. In spring it sings so vigorously that it seems as though it would crack its throat, and it is surprising what a volume of sound can come from so small a pipe. It is one of the earliest nesters, and the country people say that it is its duty to "have meat at Easter," *i. e.*, to have young by that time.

55. MOTACILLA ALBA (Linn.). "Lavandeira," "Lavandisca," Vianna do Castello, Lamego and Oporto; "Boieira," Penafiel; "Gonçalinho," Villar Chã da Maia; "Arvella," "Arvellicha," Angeja, Aveiro, Caldas d'Aregos, Estoi, Algarve; "Alveloa," Coimbra Museum; "Alvelróa," Abrantes.

Abundant: some remain here all the year round, and in October the number is increased by the arrival of migrants on their way south. There are two moults, one in August and one about the 10th February. The names "Lavandeira" and "Lavandisca" are a corruption of "Lavadeira" (washerwoman). In this country the washerwomen wade into the stream, and there they soap and beat the clothes on a broad stone slab, singing and gossiping while at their work. The bird also wades into the shallow parts and hops about on the stones, ducking its head about like the washerwomen. The name "Boieira" is derived from its habit of following about the oxen for the sake of the flies which swarm round them. "Alveloa" may be from the Latin *alveus*, the bed of a river; and "Arvella" is perhaps a corruption of the above, or from *arvum*, a ploughed field, as the bird is very fond of following the plough.

56. MOTACILLA LUGUBRIS, Temm. "Lavandisca," Oporto.

Arrives in the neighbourhood of Oporto about the 20th of October, winters here, moults to summer plumage at the end of February or beginning of March, and departs. I saw a straggler in 1883 as late as the 18th March. It is abundant along the sea-coast in winter, feeding on flies and other insects which it finds among the seaweed at high-water mark. Noticing one day a large number of these birds hovering over the sea and occasionally dipping their bills in the water to pick up something, I discovered that they were eating the floating ova of a small crab which swarms at the bottom of the sea in the late autumn off the coast of Portugal.

I have seen Pied Wagtails lately arrived attacked and pursued by the resident White Wagtails, which looked upon them as intruders. It would be interesting to tabulate the distribution of the Pied and White Wagtails. Here, in winter, one sees so many intermediate forms that, allowing for young and females, it is in come cases impossible to determine with confidence to which species the bird may belong. The Pied Wagtail is fond of frequenting roads and following cattle.

57. MOTACILLA MELANOPE (Pall.). "Lavandisca amarella," "Lavandisca da India," Oporto; "Boieira d'agoa," Penafiel.

Common and resident, but migratory to some extent. It is commoner in winter in the gardens near Oporto than in summer from October forward. Sings and courts in October, November, and December, continuing to sing in February and March; changes to summer plumage at the end of February; nests in walls at the sides of streams, and goes about in pairs.

58. MOTACILLA FLAVA (Linn.). "Lavandisca amarella," Oporto; "Boieira amarella," "Arvella," Aveiro.

Abundant. Arrives from the south at the end of March, or more frequently in the middle of April; breeds in the dry rush-beds or on the ground near marshy fields, and departs at the end of August. Dr. Carvalho informs me that at Coimbra it generally moves at that time to fields on higher ground. I once found quite a colony breeding in a field near a marsh; nearly every clump of rushes contained a nest. The birds are bold, and so long as one takes little notice of them they will come pretty close, but if approached they will soon fly off and keep at a distance. Their note is shrill and piercing.

59. MOTACILLA RAII (Bp.). "Boieira."

Arrives in Portugal on passage in the middle of September, and is met with till the end of October; during its journey it is common in the fields near the sea-coast in the neighbourhood of Oporto. It follows the bullocks while grazing, catching the flies close to their nostrils and feet. The young are commoner than the adult forms.

Between the departure of *M. flava* and the arrival of *M. raii* there is an interval. Mr. Howard Saunders remarks, in his List, that this species is abundant on passage in Spain, and particularly so in the spring at Valencia and Malaga. This would seem to confirm my supposition that this and some other species follow a south-west course in autumn by the coast of Portugal, returning northwards in spring along the east coast of Spain. On only one occasion have I seen *M. raii* on the coast of Portugal in spring, and that was on May 6th, 1879.

The names "Boieira," "Lavandisca," and "Alveloa" are applied to all the Wagtails.

60. Anthus pratensis (Linn.). "Sombria," "Cia," Oporto; "Petinha," Coimbra Museum.

The first arrivals from the north generally appear near Oporto about the 10th of October, but I have seen them as early as the 4th of that month, by the end of which they are already very abundant, continuing so during the winter. In March they take their departure, a straggler or two remaining till April. While on migration they travel in small flocks, or two or three together, a favourite time being when the east wind is blowing on a raw October morning, no which occasion flocks of Sky Larks are also so abundant that these migrants form an almost continuous stream along the coast.

61. Anthus trivialis (Linn.). "Sombria," "Cia," Oporto.

The Tree Pipit arrives in the neighbourhood of Oporto earlier than the former, viz. about the 21st of August, and by the beginning of September it is very abundant. Small flocks pass during the prevalence of east wind, at the same time as the Turtle Doves, piping their sibilant note and frequently settling in the pine-trees. In the beginning of October they begin to get scarcer, and by the middle of the month the last have taken their departure. I have not seen them on their migration northwards.

62. ANTHUS CAMPESTRIS (Linn.).

The Tawny Pipit arrives in the spring and remains till the end of summer on the serras and high ground. I have seen it on the serra behind Melres and also near Abrantes; and Dr. Carvalho tells me that it nests on a serra near Coimbra.

63. ANTHUS SPIPOLETTA (Linn.).

The first Water Pipits appear in the neighbourhood of Oporto about the beginning of October in the marshy meadows on the banks of streams near the sea. They remain till March, in which month the breast-feathers assume the slight rosy tint of the nuptial plumage, when they take their departure for their honey-moon to the Pyrenees. On one occasion I saw a bird of this species on 11th July, 1880, at Mattosinhos, near Oporto; perhaps this was a bachelor.

64. ANTHUS OBSCURUS (Lath.).

There is a specimen in the Lisbon Museum thus named, and some Pipits which I have seen on the sandbank at the mouth of the Douro seemed to me to be dark enough to be this species; but as I was not able to obtain a specimen I cannot be sure.

65. ORIOLUS GALBULA. "Papa-figo," general name; "Figo louro," Melres; "Maranteu," Villa Real; "Marellante," Bragança; "Bartolomeu," Coimbra Museum.

The Golden Oriole is rarely seen near Oporto, and mostly on passage; but I am told that one pair nested at Villar, a suburb of Oporto, in 1883. One was observed by me on the 7th September, 1879, at the mouth of the Douro, and some have been seen at Entre Quintas. About twelve miles up the Douro, in the neighbourhood of Melres, it is common during the summer months, and in many other localities in Portugal, as, for instance, on the banks of the Minho, near Monsão, in the Alto Douro, Riba-tejo, Alemtejo, and Algarve. It is rather a local bird.

66. Lanius meridionalis, Temm. "Picanso real," Alpiarça and Santarem; "Picanso baccoreiro," Abrantes.

Resident, but very local, and nowhere abundant. Nests in the Serra d'Estrella and at Abrantes on small trees, and I have met with it in the Alemtejo. During winter some appear near the sea-coast, as is the case with several other birds which frequent the serras in summer.

67. Lanius collurio (Linn.).

The only specimen of the Red-backed Shrike which has been obtained in this country is one which I shot on the 9th June, 1882, on the island of Conguêdo, in the river Minho. The nest was also found in a bramble-thicket, from which I had disturbed the bird when building.

68. Lanius pomeranus, Sparrman. "Pardal real," Arcos; "Pintaloporco," Villar Chã da Maia; "Picaporco," Oporto, Penafiel; "Tanjasno," Penafiel; "Tanjarro," Melres; "Picanso barreteiro," Traz os Montes; "Carapuço," "Picanso," Abrantes.

The Woodchat arrives in April, nests in pine and other trees, and generally departs about the end of August, but specimens have been obtained in September and as late as the 5th of October. Very abundant in summer in and near woods all over Portugal, and is decidedly the dominant Shrike of the country.

69. Muscicapa grisola. "Tralhão," Traz os Montes, Caldas d'Aregos, Penafiel; "Papa moscas," Oporto.

In May I have seen this species at Melres, near Oporto, and on the 3rd of June, 1884, I found a nest with four eggs in Quarteira pine-wood, near Faro, Algarve, where I saw many of these birds. It is local and by no means common in this country during summer; but in autumn large numbers arrive on passage through the woods along the sea-coast near Oporto, and may be seen flitting silently from one tree to another catching insects. They usually arrive at the end of August or beginning of September, and have departed by the third or fourth week in October.

70. Muscicapa atricapilla (Linn.). "Papa moscas," Oporto.

Abundant in autumn on passage, arriving and departing at the same time as *M. grisola*. This is a somewhat livelier bird, and occasionally utters a monosyllabic note.

The European lists mention *M. collaris* as found in Portugal, without naming the authority, but no specimen of *M. collaris* exists in the Coimbra or Lisbon Museums; and although I have been on the watch for it for some years, so far as I can learn it has not yet been obtained in this country.

71. Hirundo rustica, Linn. "Andorinha," Portugal and Galicia.

Usually arrives at Oporto between the 8th and 15th of March, but sometimes a stray individual or two may be seen at the end of February, and I once saw some as early as the 13th of January, 1878. In the south of Portugal they arrive in February. The departure southwards from the neighbourhood of Oporto generally takes place from the middle of September to the middle of October, but some remain for a few days, or even weeks, longer. I saw one as late as November 20th (1883); in fact, December is the only month of the year in which I have not seen them in this country. In the province of the Douro this Swallow nests in the subterranean galleries which are cut into the hill-side to obtain water—a rather unexpected situation for Swallows to choose. Dr. Carvalho has furnished me with a table of observations respecting the Swallow, as observed by him at Coimbra during the last fifteen years, showing that the average date for arrival is the 10th February, and for departure the 13th October.

72. Cotile rupestris. "Andorinha brava," Melres.

Resident in this country all the year round, but partially migratory within it. The Crag Swallow makes its nest in the precipitous cliffs of the inland serras, and I found one on a cliff of the Abitureira, above Melres, on the right bank of the Douro. In shape it resembles that of the House Swallow; it was built of mud and had a few feathers in it. At the end of October or beginning of November flocks of about eight to twenty birds appear at the sea-side in the neighbourhood of Oporto, and remain till about the end of February or the beginning of March.

The flight of this species is extremely graceful—so smooth, silent, and apparently effortless—and I have often watched it with pleasure. Occasionally a bird would seem to turn a somersault, like a Tumbler Pigeon, but with a wider radius and without disturbing its flight. I could never, however, feel quite sure that it was not an optical delusion on my part.

73. COTILE RIPARIA (Linn.). "Pedreiro das Barreiras," "Pedreirinho."

This species is not so common as the House Martin and Swallow, and is oftener found in the north than in the south of Portugal. I have met with it in various places in the province of the Minho, and on the river of that name it is very abundant, burrowing in the sandy banks of the islands worn away by the current. A colony is established at the road-side near the favourite shrine of Bom Jesus do Monte, near Braga, and I have seen another at Magdalena, near Oporto. Some were seen by me April 5th, 1884, between Beja and Mertola, in the Alemtejo, on the banks of the river Torges, and I saw the holes in the bank where they nest.

74. CHELIDON URBICA (Linn.). "Andorinha das janellas," "Andorinha dos beiraes."

The House Martin generally arrives at Oporto about the 6th April, remaining till the middle of September; I saw one this year at Abrantes, on the Tagus, on 2nd February. Dr. Carvalho's observations, extending over twenty-three years, give an average date for arrival at Coimbra of 19th February, and for departure 7th October. The birds usually go at once to their nests of the previous year and commence repairing them, the male and female working alternately.

75. CARDUELIS ELEGANS, Steph. "Pinta silgo," general name; "Milheira galante," Beira; "Pinta cardeira," Coimbra; "Silgaro," Galicia.

The Goldfinch is common all over Portugal, especially in the localities where there are plenty of thistles, as about Peniche. In the beginning of October, and up to the end of the first week of December, the birds move southwards in small flocks, flying in the morning up till about 11 o'clock, especially with an easterly wind. The chief migration is in November, and near the sea-coast. The bird-catchers obtain large numbers during their passage by the aid of limed twigs and a good call-bird. The return north in the spring takes place from the middle of March and lasts about a fortnight: a far shorter time than the autumn migration. On the spring migration Goldfinches prefer a mild south, or better still, an east wind. Their flight on spring migration is said to last from 7 to 10 A.M., and their line of flight is then not so near the coast as in the autumn. Many of the Goldfinches taken by the Oporto bird-catchers are afterwards sold to the sailors of English vessels.

76. CHRYSOMITRIS SPINUS (Linn.). "Canario da França," Foz do Douro; "Freirinha," Oporto.

The Siskins arrive on the autumn migration with the Goldfinches in November and December, but they are not seen every winter, although during others they are almost common. They are well known to the bird-catchers, as they are occasionally caught on the limed twigs set for Goldfinches. Dr. Carvalho has seen them at Coimbra.

77. SERINUS HORTULANUS. "Serzino," general name; "Cerezino," Melres; "Riscada," Villar Cha da Maia; "Milheira," Caldas d'Aregos; "Milheiro galante," Recarei; "Chamariz," Coimbra Museum; "Serin," Galicia.

Serin Finches are more abundant in spring and summer, many of them migrating southwards in the autumn at the same time as the Goldfinches, and northwards in the spring, but a few remain through the winter, at all events near the sea-coast. They begin to sing in the middle of February, stop for a short time in August and the beginning of September, recommence in this last month, and continue till the beginning of November.

78. Ligurinus chloris (Linn.). "Verdilhão," Portugal generally; "Verderol," Galicia.

Very abundant and resident, but some pass southwards in the autumn and north in the spring. Greenfinches are very fond of the seeds of *Datura stramonium*, the thorn-apple datura. Their song begins in the first week in March, and continues till the middle of July, when it ceases.

79. Coccothraustes vulgaris. "Pardal do norte," "Chincalhão do norte," Penafiel; "Bico gordo," Caldas d'Aregos; "Bico grossudo," Coimbra.

The Hawfinch is resident. In spring and summer it is found in the Alto-Douro and Beira, chiefly in the higher ground; but in winter it descends to the lower districts and the sea-side, at which season it is sometimes seen near Oporto. The farmers complain bitterly that this bird does great damage to the seed-beds, especially those of turnips, to which it is very partial. I was disappointed at not finding this species in the Serra do Gerez.

80. Passer domesticus. "Pardal," general name; "Pardal" and "Gorrion," Galicia.

The House Sparrow is very abundant and generally distributed, the only locality in which I have not met with it being the Caldas do Gerez, a favourite watering-place in the Gerez mountains, famous for its hot mineral springs. The country round this beautifully situated little village is very interesting to the botanist, and is rich in reptiles. Eagles are plentiful on the crags, but there is a wonderful scarcity of other birds.

It has been much discussed whether the Sparrow is beneficial or prejudicial; but Portuguese farmers lean towards the latter, and if powder and shot were cheaper, the Sparrows would lead a precarious existence; and observations lead me to take the farmers' view. No doubt they eat many insects, for I have seen them pick caterpillers out of cabbages, catch flies, and eat berries; but, for all that, their general and favourite food is seed of all kinds. It is sufficient to examine the shape of the bill to see that this species is essentially graminivorous, and only exceptionally insectivorous. Dr.

Carvalho is of opinion that they should be exterminated. The cork-tree is a favourite one for their nests.

I have not observed the Tree Sparrow, *Passer montanus*, in Portugal.

81. Petronia stulta. "Pardal francez," Oporto; "Pardal da India," "Pardal Girio," Melres; "Piriz," Bragança and Ribatejo; "Pardaloca franceza," Abrantes.

The Rock Sparrow is resident and, on the whole, common, but local, being almost rare in the neighbourhood of Oporto. I have seen it at S. João da Foz, Villarinho, and some other localities in spring and summer. At Melres, Ovar, Abrantes, &c. it is common. Dr. Carvalho informs me that it is not rare at Coimbra. Its peculiar note, whence its local name "Piriz," attracts attention when otherwise it might escape notice, as it has a habit of sitting quietly on a branch for a considerable time.

82. Fringilla cœlebs, Linn. "Pintalhão," Vieira, Arcos, Valença, Recarei; "Pimpalhão," Sto. Thyrso, Fafe, and Alto Minho; "Chincalhão," Penafiel, Melres, and Caldas do Gerez; "Chopim," Foz do Douro; "Pimpim," Caudal, Foz do Douro and Esmoriz; "Tentilhão," Abrantes, Lamego, Villar chã da Maia, Coimbra, Caldas d'Aregos.

The Chaffinch is an abundant resident, and in October and November flocks arrive near the sea-coast on the passage south. Early in February it begins to sing, continuing till about the middle of July, recommencing in September and lasting throughout October if the weather be fine; I have heard it as late as November 27th. On a summer visit to England, I remarked that the song of the Chaffinch in Derbyshire is very different from that of the Oporto bird—quite a distinct dialect, as it were. The dialectic differences in the songs of some birds have already been noticed by Prof. Alfred Newton.

83. Fringilla montifringilla, Linn. "Tentilhão montez," Coimbra Museum.

The Brambling sometimes appears in winter amongst the flocks of Chaffinches.

84. Linota cannabina (Linn.). "Linhaça vermelhal," Vianna; "Milheiro," Oporto; "Cacherá," Melres; "Milheirinha," Esmoriz; "Pinta roixo," Agueda, Abrantes, Coimbra.

The Linnet is a common resident; large flocks migrating southward in October and November, and northward again in spring, being taken by bird-catchers at the same time as the Goldfinches. The Linnet sings from February to July, recommencing in September, and once I heard it sing as late as 7th December.

85. Pyrrhula europæa, Vieill. "Cardeal," Penafiel; "Tentilhão da India," Melres; "Dom Fafe" and "Pisco chilreiro," Coimbra Museum.

I am told that the Bullfinch is common in the neighbourhood of Penafiel, and I have seen specimens said to have been obtained near Braga. Although I have never met with this bird wild in Portugal, it must be far from rare in the northern provinces, as it has so many popular names there, and occasionally bird-catchers from Traz os Montes bring large numbers in cages for sale to Oporto.

86. Loxia curvirostra. "Cruzabico."

Appears occasionally in small flocks in winter. I have seen specimens obtained in this country, and have heard of two well-authenticated cases of Crossbills being seen in gardens near Oporto.

87. Loxia pityopsittacus, Bechst.

Dr. Carvalho informs me that there are two or three specimens of the Parrot Crossbill obtained in Portugal in the Coimbra Museum.

88. Emberiza miliaria, Linn. "Passarinho trigueiro," Esmoriz; "Tem-ti-na-raiz," Province of Beira; "Trigueirão," Peniche; "Chichorrio," Quarteira, Algarve.

The Corn Bunting is very abundant in suitable places from the extreme north to the extreme south of Portugal. Near Oporto it is scarce, and I have only met with it in summer between Boa Nova chapel and Leça de Palmeira. I suspect it is partly migratory in this country, as are many other graminivorous birds.

89. Emberiza cirlus, Linn. "Escrevedeira," Oporto, Penafiel; "Sentieiro," Castello de Paiva; "Arojado," Caldas d'Aregos; "Sia," "Siôcho," "Sicia," Coimbra Museum.

Resident, and by far the commonest of the Buntings in the north of Portugal. It is one of the most constant songsters in the country. I have heard it utter its poor monotonous note in every month of the year except February, during which month it moults from winter to summer plumage. The second moult is in August. Cirl Buntings generally go about in pairs, frequenting the edges of pine-woods, hedgerows, and sunken lanes.

90. Emberiza hortulana, Linn. "Nil," Melres.

I have met with the Ortolan Bunting sparingly on the top of the Serra de Melres, near Oporto, and also on the hills near Palhal. Dr. M. P. d'Oliveira tells me it is found near Bragança. It seems to prefer high ground, and has a short and musical song. I have not met with it in winter.

91. Emberiza cia, Linn. "Trigueiro," Coimbra Museum.

The Meadow Bunting is local, but common in some places, for instance, on the sides of the Serra do Gerez. I have met with it near Melres, Sobrado de Paiva, Caldas d'Aregos, Bom Jesus do Monte, and Olhalvo; but I have not seen it near the sea-coast. Dr. Carvalho informs me that this species is resident near Coimbra, nesting on the high ground in summer, and frequenting valleys near the serras in winter, going about in small flocks.

92. Emberiza schœniclus, Linn.

The Reed Bunting passes the winter in this country, arriving in the beginning of November.

93. Plectrophanes nivalis (Linn.).

A few Snow Buntings sometimes appear in this country during severe winters. My brother has shot them near

Oporto, and also at Ovar; and I kept one which had been wounded for some time in a cage.

94. Alauda cristata. "Cotovia," general name; "Poupinha," "Gagalhosa," Rezende; "Patorra," Traz os Montes; "Calandra," Caldas d'Aregos.

The Crested Lark is resident and abundant in Portugal, frequenting the hilly country more than cultivated land, but it is common in fields of rye. I have received from Alpiarça, near Santarem, two specimens much lighter in colour than those from the north of Portugal; they had also longer and more curved beaks. I have seen a specimen of this same variety obtained in the plains of the Algarve. The lighter colour is probably a protective adaptation to the light-coloured earth of the plains of the south, the mountain form of the north of Portugal being darker on the back.

95. Alauda arvensis. "Laverca," Oporto; "Calandra," Monchique.

Immense numbers of migratory Sky Larks arrive in the neighbourhood of Oporto from the middle of October onwards, and a few in the beginning of that month, many remaining through the winter, departing in March. They are very abundant in the cultivated fields near the sea-coast, and go about in large and small flocks, the chief line of migration being a few hundred yards from the sea. They prefer an easterly land-breeze for their travelling, and on favourable mornings an almost continuous stream may be seen near the mouth of the Douro.

A darker variety of the Sky Lark is found on the summits of some of the serras. I have met with it in April on the top of the Foja peak, Serra de Monchique, and specimens have been obtained in summer from the Serra do Roxo, near Coimbra.

No Sky Larks are found in summer near Oporto. It will be interesting to learn whence come the large numbers which arrive here in the autumn. The matter of the varieties found in this country requires further inquiry and the comparison of a large number of specimens.

96. Alauda arborea, Linn. "Cotovia pequena," generally; "Calandria," Galicia.

The Wood Lark nests on the high ground of the provinces of Minho and of Beira; also, as Dr. Carvalho informs me, in the serras to the east of Coimbra. I met with it in June on the top of the Serra do Gerez and at Abrantes, where I have also seen it in January; in April also at St. Domingos copper-mine, in the Alemtejo.

Immediately round Oporto it is very scarce in summer. In September and October numbers arrive at the pine-woods near the mouth of the Douro, and spend the winter months there, going away on the approach of spring. Some linger on till March, and a pair or two even into the summer. This is one of the latest singers, being heard into the months of September, October, and November.

97. Calandrella brachydactyla (Leisl.). "Carreirôla," "Calandra gallega," Estoi, Algarve.

The Short-toed Lark is a summer visitor, abundant in some localities, and chiefly so near the sea-coast on sandy hills or plains. It is common between the Castello do Queijo and Mattosinhos, near Oporto. I am not certain at what date birds usually arrive from the south, but I have seen them from April 22nd till the 21st August.

98. Melanocorypha calandra (Linn.). "Cochicho," Traz os Montes; "Calandra," Villa Real de Sto. Antonio.

Very local. Found in Traz os Montes, from which province many are brought to Oporto, where they may be seen in cages hung up at the doors of small shops in the bye-streets, uttering their shrill ear-piercing song, and mimicking, as well as they can, the songs of other birds. On one occasion I heard one imitate the Canary. An indefatigable singer with a loud voice fetches a high price, sometimes as much as two or three pounds sterling.

One of the bird-dealers informed me that this bird has sometimes a parasite, like a tick, on its ears, and unless this is removed, it eventually causes the death of the Lark.

The nearest place to Oporto at which I have heard that it is found is Loureiro, near Caldas d'Aregos; it is said to occur at Alpiarça, near Santarem; I have seen it at Beja, and also at Villa Real de Sto. Antonio, and these are the only localities at which I have noticed it.

[99. CERTHILAUDA DUPONTI, var. LUSITANICA.

We add this to the list on the authority of Dr. J. V. B. du Bocage, whose account of the discovery has just reached us. Particulars will be found under 'Notices' below.—EDD.]

100. STURNUS VULGARIS, Linn. "Estorninho," Portugal generally.

The Starling is a winter visitant, arriving early in October, and in some years even by the end of September. Flocks continue to pass southward near the sea-side till about the middle of December.

101. STURNUS UNICOLOR, De la Marm. "Estorninho preto."

Resident, and very common inland, especially during the spring and summer, but in the immediate neighbourhood of Oporto it is not abundant. A few pairs nest in the Quinta do Fôjo Caudal, near Oporto, and some in Romalde. They are very restless birds, and fly about in small flocks.

102. PYRRHOCORAX GRACULUS (Linn.).

The Chough is said to nest in the cliffs of the Rio Homem, Serra do Gerez. I saw a flock of these birds in a field near Ovar in winter, the only occasion on which I have met with them. Specimens from Penamacor are in the Coimbra Museum, and in the Lisbon Museum there are two specimens from Collares, where this species is said to nest.

103. NUCIFRAGA CARYOCATACTES (Linn.).

The only Nutcracker obtained in this country was shot in winter by a Mr. Correia in the pine-woods to the east of Estarreja, about fifteen years ago, and was exhibited at the Crystal Palace of Oporto.

104. GARRULUS GLANDARIUS. "Gaio."

Abundant in the north of Portugal, less so in the centre, and rather scarce in the south. More frequently heard in summer than in winter. On the 6th of October, 1883, when an easterly wind was blowing, a flock of twelve Jays, flying high, apparently on migration, arrived over the trees in my garden, circled round several times, uttering their cry, and finally disappeared towards the south-east.

105. Cyanopica cooki, Bp. "Rabilongo," Lisbon; "Charneco," South Alemtejo and Algarve.

The Azure-winged Magpie is said to appear in winter at Montijo and other parts of Alemtejo. At Coimbra there are three specimens from Penamacor, and in the Lisbon Museum there are some from Alfeite. It is essentially a bird of the south of Portugal, not found in the north. I met with it abundantly in the province of Algarve during spring, summer, and winter visits; also at Sta. Clara a Velha (Alemtejo) in April. The inhabitants say it nests in fig, olive, and carob trees. When not nesting they go about in flocks, and are sometimes put up by the dogs when seeking for Woodcock.

106. Pica rustica. "Pega."

The Magpie is abundant and resident, especially in the north. The nests are usually domed and in pine trees; but at Ovar I found one on a low bush about 3 feet from the ground, in the middle of a large marshy treeless plain.

107. Corvus monedula, Linn. "Choia," Cie Islands, Vigo.

Rare in Portugal, but may yet turn out to be common in some localities, if it be found to nest anywhere in this country. In March 1878 I saw some near Oporto. There are three specimens in the Lisbon Museum, one of which is from Penamacor.

I found Jackdaws plentiful on the Southern Cie Islands, at the entrance to Vigo Bay, Galicia. They breed in holes under the stones on the south-east side of the island, and follow the droves of pigs in order to eat the insects which these animals turn up when grubbing in the soil with their snouts. They may often be seen perched on their backs waiting while the friendly pig ploughs up the ground.

108. Corvus corone. "Corvo."

The Crow is common and resident, some nesting in this country; I have received eggs from Anchora, near Vianna, where they are specially abundant. At the end of October and November some arrive on passage.

109. Corvus frugilegus, Linn. "Gralha."

The Rook arrives in the autumn, and remains during winter, going about in large flocks, and leaving in February and March.

110. Corvus corax, Linn. "Corvo."

Rather common and generally distributed. I have at the present moment a tame Raven, which was sent to me from the province of Algarve.

[To be continued.]

XX.—*Notes on Birds in the Western Pacific, made in H.M.S. 'Constance,'* 1883–5. By J. R. H. MacFarlane, Navigating-Lieut., R.N.

Few parts of the world can be more fraught with disappointment to the ornithologist or entomologist than the inshore passage, known as Smythe's Channel, from the Straits of Magellan to the Gulf of Peñas. Rain, hail, and snow succeed each other, the normal state of this region being one of dampness; but sometimes between the showers a vision of lofty mountains appears in a break of the clouds, or a huge white glacier stands suddenly out in bold relief for a few moments, only to vanish in the mist and rain as quickly as it came. In the brief intervals of fine weather, the snug little harbours look fresh and green, and the heart of the collector is gladdened by the prospect of exploring almost untrodden ground; but this hope is soon dispelled, for so sparsely populated by animal life is this district, that even one having no special interests in that direction would instinctively feel sensible of this great want of animation in the scene. The botanist would probably find a larger field for his researches in the primeval surroundings; but let him tread with caution the mossy banks which look so attractive, for what seems to be solid ground is frequently only a thin green film spread over the rotten, rain-sodden vegetation of ages, which may be several feet in depth.

The Steamer Duck (*Tachyeres cinereus*), ubiquitous in the Magellan Straits, here shows a great decrease in numbers, and only a few Kelp Geese (*Bernicla antarctica*) are to be seen. At Port Grappler, on the 27th February, three rich ruddy-brown Geese were observed, probably *Bernicla magellanica*, also one or two Shags and Belted Kingfishers, and we shot a few Snipes. Throughout the whole of this channel no traces of human beings were met with. At Grey's Harbour, near English Narrows, a Huanaco was seen and fired at, and in the broad Messier Channel, leading into the Gulf of Peñas, there were a few *Larus dominicanus*.

The change from this damp and verdant country to the dry sandy bay of Coquimbo (30° S.) is very great. Scarcely any green here meets the eye save a few trees round La Serena, seven miles further up the coast, and a small forest of *Eucalyptus globulus* planted round the copper-works belonging to Mr. Charles Lambert, at La Compania, about a mile from La Serena. In the bay there were a good many *Larus dominicanus* in different stages of plumage, but no other Gulls or Terns, also a few Pelicans; and between the 30th March and 2nd April there was a heavy migration, principally at night, of Herons, Egrets, &c.

In the long strip of marsh extending nearly from Coquimbo to La Serena and running parallel to the sea-beach, a few Snipe, Teal, and Curlew may be picked up, and by taking the railway inland fair "partridge"-shooting obtained. These birds look and fly more like a Quail, whistling loudly on getting up; they are really Tinamous (*Nothoprocta perdicaria*), and average about a pound in weight. In March they are somewhat scarce, the rains not having commenced, so that the birds are not down from the hills. In the *quebradas* or ravines there is some pretty shooting in July, August, and September; August being the best month, as the "Tortolas" (*Zenaida aurita* and *Z. boliviana*) are numerous and fly strongly up these gullies in the evenings, giving by no means easy shots. A migratory fish, called "corbina" (often compared to the salmon, but in reality more like a bass), comes to the bay in November and yields good trolling, a friend of mine having killed one on the rod which turned the scale at 25 lb.

In order of latitude, Arica was the next port visited (October 1883). It lies on another sandy bay somewhat similar to that of Coquimbo, but with a heavy rolling swell at most times, whereas Coquimbo is comparatively smooth. From the bay there is probably one of the finest panoramic views of the Cordilleras to be seen; and close to the southward of the port is the memorable bluff, or "Morro," where during the late war between Chili and Peru, the Peruvians, men and horses, were driven over the cliff, which is several hundred feet high, on to the sea-washed rocks below. A small marsh lies about five miles from the town, the road to it passing the U. S. steamer 'Wateree,' which was thrown up inland by a great tidal wave in about 1876; and there we shot two kinds of Ducks—*Fuligula nationi,* the only Pochard found in the country, and *Dafila bahamensis* of wide distribution—and on the beach Curlew, Golden Plover, Sandpipers, and Skimmers. On the 4th October an immature Arctic Tern, *Sterna macrura,* was found in an exhausted condition in one of the boats on the davits, the most southern locality on record in America for this northern species.

A little more than a hundred miles further up the coast is the miserable village of Mollendo, the sea-port of Arequipa, with which it is connected by rail—being about as ill-suited for the purpose as possible, for the anchorage is bad, and the collected swell of the Pacific seems to hurl itself in upon the ugly black rocks. Landing is difficult and uncertain, being generally effected by a large basket, which is lowered by a crane into the boat. About thirteen miles by rail there is a marsh, probably the largest on the coast, crowded with Coots and Ducks, amongst the latter *Fuligula nationi* and *Dafila bahamensis,* but the last was not in great numbers here.

The bays of St. Juan and San Nicholas, in about 15° S., are separated only by a tongue of land. In the former, on the 9th November, Godwits (*Limosa hudsonica*) were exceedingly numerous, eleven being killed with one barrel out of a flock flying past the boat; and in the latter bay, on 23rd September, White-bellied Oyster-catchers (*Hæmatopus palliatus*) were plentiful. Both these bays are uninhabited, except by a few nomadic fishermen during certain seasons of the year. Independencia Bay (about 14° S.) being only a few miles to the southward of Paracas, where Commodore Markham obtained the celebrated Fork-tailed Gull (*Xema furcatum*), a sharp look out was kept for anything answering to its description, but without success.

Callao Bay and the adjacent island of San Lorenzo (12° S.) would doubtless give very interesting results as regards Laridæ, if observations were extended over a whole year, so as to enable the arrival and departure of birds to be noted. I visited Callao during seven different months, and have tabulated my observations, commencing from my first arrival in April 1883. At that date there were numbers of the North-American breeder *Larus franklini*, the Andean *Larus serranus*, and, especially, the beautiful slate-black Inca Tern (*Nænia inca*) with its curling white moustaches and cherry-red bill and feet. I remained only a couple of days, and on my return in August only *L. serranus* still remained and was in considerable numbers. This is the largest of the Hooded Gulls found on the coast. As we anchored at San Lorenzo towards the end of the month and remained till the middle of September, I had ample opportunities of exploring nearly every part of the island. During my rambles I visited a sandy plateau in the centre, elevated perhaps about 500 feet above the sea, and there found a colony of about a dozen *Sterna exilis*, a species rather larger and greyer than our Little Tern. They were continually flying over one particular part, uttering their short sharp cries, and at one time it looked hopeful as a breeding-place, especially as I picked up one small fragment of egg-shell; but beyond this I could find no traces of nesting. They were exceedingly incensed, either at my general appearance or an old white felt lawntennis hat I was wearing, which, from washing, had assumed the pointed style of a jelly-bag, and they made a combined attack on me, flying straight at my eyes or the apex of the hat, and passing so close that I could almost knock them down with my hand. On the same day (August 28th) I shot a young *Larus belcheri,* a confiding and conspicuous species, which generally sits upon the buoys amongst the shipping. Its breeding-place, like that of the *Sterna exilis,* is, I believe, still unknown. The White-bellied Oyster-catcher (*Hæmatopus palliatus*) and the Black Oyster-catcher (*Hæmatopus ater*) were both exceedingly common on the sandy beaches of San Lorenzo; their native name is "Boquilla," and they are capital eating. I also shot an immature specimen of *Larus dominicanus.*

At this time my ambition was to slay the Condor of the Andes; they were then in fair numbers about the higher parts of the island, and I could generally count from a dozen to twenty at a time soaring over the hills. I soon discovered that at any ordinary distance a 12-bore, although loaded with buck-shot, was harmless, and after firing several times at ranges of 30 or 40 yards with the result of a shake of the tail or an extra flap of the wings, I concluded to resort to stratagem. Taking my spaniel and a short cover-gun loaded with heavy buck-shot, I ensconced myself in a hole at the top of a sandy cliff facing the sea, and tied up my dog; his nature is a restless one, and he shows his disapprobation of any restraint by constant whining, which, as a general rule, is annoying, especially if waiting for ducks, but it suited the circumstances of this case admirably. I had provided myself with a novel, and basking in the sun made myself very comfortable. Soon I perceived that the plaintive noises made by my dog had produced an effect; gradually the Condors passed and repassed in their majestic flight, curiosity bringing them each time nearer and nearer, till at last I saw the most inquisitive bird passing within five yards of my retreat, when to drop the book and deliver the contents of both barrels was the work of a second. To see a heavy bird such as a Mallard suddenly drop with a thud is generally satisfactory, so my feelings may be understood when my raptorial friend plumped down about two hundred feet below, sliding and rolling down the deep sand of the precipice, at the foot of which I found him lying as dead as a stone. The next question was, what to do with the carcase, being about four miles from the ship with a hill of about 600 feet high to cross, through sand up to the ankles and under a blazing sun. I decided on cutting off the wings at the shoulder for a fire-screen, with his neck, head, and claws as trophies, and with these articles tied round my neck I commenced my homeward tramp. Although triced by the bones close up to my neck the tips of the wings trailed on the sand and, being extended, hung like an immense cloak over my back. Whether for this reason, or owing to the strong smell emitted from the bird, I am unable to say, but I had no need now for my dog's whinings, as all the way in my ascent the Condors wheeled round my head in uncomfortable proximity, and I had to fire at them several times with small shot when they came, as it seemed, almost dangerously near.

In August and September, 1883, the South-American Great Skuas (*Stercorarius chilensis*) were abundant in Callao Bay, and they lead the Gulls a hard life during the time their presence lasts; but I am told that during part of the year they are not seen in the harbour, being probably away at their breeding-places. On the 17th and 18th November, 1883, I shot two specimens of *Stercorarius pomatorhinus*, which Commodore Markham had been the first to obtain in this locality, the most southern on record for America.

Close to the anchorage at San Lorenzo and much in the way, was an old sunken dock; and, partially with a view of seeing if the wreck could be removed, as well as for practice, two large cylinders of gun-cotton were exploded. The number of fish stunned was truly wonderful, the water being literally covered. Scarcely any under a pound weight were thought worth collecting, but the pile on our deck alone must have been about ten feet square and three feet high in the centre. Besides which a heavily laden boat was sent to the foreign men-of-war at Callao, and every fishing-craft off

San Lorenzo was filled. Some private communication seemed to exist between San Lorenzo and the Pelicans (*Pelecanus molinæ*) at Old Callao Point, a distance of about three miles; as immediately after the explosion a small number were seen advancing from there in Indian file, and in less than a quarter of an hour there was an unbroken line of these birds right across. I have never seen so many before or since on the coast, but I fancy none went empty away.

From the 22nd January to the 21st February, when lying at San Lorenzo, the place was singularly free of Gulls and Terns, no Incas were to be seen there nor at Callao, and although I went over the hills to look for *Sterna exilis*, it was in vain. In February small fry, called here "sardinas," appeared in such numbers that I have seen a bucket dipped over the side of a boat into a shoal and lifted out filled with them. We found them an excellent substitute for whitebait; and numbers of *Larus serranus* and *L. franklini* came also at this time. In April the "sardinas" appeared again, and were lying on the surface of the water in great patches of dead and dying, being probably killed by the evolution of sulphuretted hydrogen from the bottom, well-known on the coast as "the painter." With them came myriads of Gulls—*L. franklini*, some in fully adult plumage, and *Xema sabinii*, adults in winter plumage; the latter hitherto a great rarity so far south, but here, again, Commodore Markham had anticipated me in the discovery.

On the 10th of April no Inca Terns had appeared in the harbour, the local men assuring me that they would be back from their breeding-place very shortly; and it is worthy of notice that on the 21st April, 1883, they were in crowds in the bay. The Peruvian vessel 'La Union,' wrecked here, seemed to be altogether given up to Cormorants (*Phalacrocorax gaimardi* and *P. brasiliensis*). I have often passed it when it has been so closely packed with them that neither on masts nor rigging did there seem standing room for another bird.

My observations lead me to believe that there is no breeding-ground of any importance on San Lorenzo; but as both Gulls and Terns appear in the harbour at certain periods of the year, and in large numbers, it looks as if there is some large breeding-place adjacent. Of course this does not refer to birds that are known to breed in North America. My theory is, that since the birds have been driven away from their breeding-places, such as the Chinchas, Lobos de tierra, Lobos de afuera, and other guano-islands, they have gone to the small island of Hormigas de afuera, about 30 miles to the west of Callao, seldom, if ever, visited, except by a few nomadic fishermen, as it lies out of the track of vessels. The local fishermen told me that at certain seasons the islands were crowded with birds breeding, and that *Nænia inca* was certainly amongst the number.

At Chimbote (about 9° S.), 2nd to 5th August, there were numbers of *Sterna hirundinacea*, the South-American representative of our Common Tern, on the beach; this is the only part of the coast where I have seen them. We also shot several Curlews (*Numenius hudsonicus*).

The bay of Payta (5° S.) claims some notice for its remarkably pleasant climate; for although the surroundings are sandy, it is probably one of the most cheerful-looking places on the coast,—almost continual sunshine without great heat, cool sea-breezes, and a dry atmosphere: rain having fallen about once in the last ten years, on which occasion it flooded the dry bed of a former small stream and did considerable damage to the *adobe*-built houses, which were never intended for such a contingency. There is no fresh water in the place, it being all brought in tanks, by train, from the Chira river, and sold by the gallon. *Daption capensis* was plentiful outside and in the harbour in July, and I sent home a specimen for identification, taken in 6° S., as well as a white *Procellaria gigantea*, the only one seen on the coast. The Grey-capped Gull, *Larus cirrhocephalus*, was also obtained here, making the fifth example obtained on the west coast of America, and the most northern locality on record.

Payta, like many other places on this coast, is devoid of verdure. It is said that some years ago a tree was painted on the gable of one of the houses on the beach, so that the passengers by the steamers might have some green object to look at; but the donkeys were so deceived by the resemblance that they considered it should have umbrageous qualities, and in endeavouring to crowd under the fancied shade, they eventually rubbed all traces of the tree away! The Chira river farther up the coast, from which the water is brought to Payta, is, however, well wooded on the banks. A party of officers from the ship, principally midshipmen, camped out on its banks for four or five days, their bag consisting of 83 Pigeons, 77 Parrots, and 44 Squirrels, the latter the chinchilla-coloured animal; but five of the party were afterwards laid up with fever from sleeping on the ground and not off it!

During the months of May and June 1883 we were moored off the town of Guayaquil, about seventy miles up the river of that name, probably one of the hottest and most unhealthy places on the coast; but fortunately we were there in the dry season. The town being nearly always in a state of siege from civil war, it was impossible to make many excursions. Crocodiles abound in the river, and there is no difficulty in shooting numbers; but as they generally manage to glide off the muddy banks into the river unless shot dead, it is poor sport, for they are of no use, unless a skeleton or head be wanted, and the strong smell of musk emitted from the skin is unpleasant. In the early morning, and again in the evening, there were numbers of *Sterna magnirostris*, but I never saw one in the daytime. The pretty spur-winged *Parra jacana* was also obtained; and having noticed a flight-line of Parrots coming home from their feeding-grounds in the evening, I had some capital shooting, until they became too wary and raised their line of flight; they are very good in a pie. In October 1885 I crossed the large bay of La Union in a boat and visited several of the islands, without seeing anything but Pelicans, which were in great numbers.

Leaving Coquimbo in February 1884, for a cruise in the Pacific, the first island visited, if it may be so called, was Sala y Gomez (26° S.), on the 5th March. It much resembles

St. Paul's Rocks, in the Atlantic, and is almost as inaccessible, being a small cluster of low black rocks, over which the sea is generally breaking. As on this occasion the swell was comparatively slight, a boat was sent and a landing effected, but not without difficulty. *Anous stolidus, Gygis candida,* and *Fregata aquila* were found breeding, and from an egg of the first I extracted a young bird of such a size, that it seemed a wonder how the shell ever contained it; so, as it could not possibly have been put back again, I preserved it in spirit, and I believe it is now in the possession of Mr. Beddard, Prosector to the Zoological Society of London. To find these birds breeding in this latitude, at this time of the year, upsets one's ideas of seasons.

Innumerable sharks were round the ship, and some curious bright-coloured fishes were killed by exploding a small charge of gun-cotton. The sailor seems always to be imbued with a deadly hatred against the shark, and, as a rule, directly one is reported in the vicinity of the ship, the shark-hook and piece of pork soon make their appearance; but the officer responsible for the cleanliness of the ship seldom sees the force of the quarter-deck being turned into a shambles. So at this island we instituted a plan which satisfied the hatred on the one side without interfering with the purity of the decks. The hooked fish being run up under the counter, was secured with a running bowline, and disembowelled by a sailor sent down over the side, then lowered until about one half in the water, when the blood and offal soon brought scores of his old friends round, but not in a very friendly spirit. Tearing and worrying at their defunct chum, they threw prudence to the winds, and necessarily exposing themselves to get at the parts out of water, became easy shots for the rifle; and as shark after shark floated astern, a cannibal festival, hitherto unrecorded in the archives of Sala y Gomez, was celebrated.

Passing to the southward of Easter Island (27° S.), and using a strong glass, the massive carved stone figures, which have been a puzzle to everybody, could be seen standing on the slope of the hill. How these huge blocks of stone came there, and who were the sculptors, can be only a subject of conjecture. The inhabitants of the island were occupied in stock-raising, both cattle and sheep. The common domestic fowl is found over most parts in a perfectly wild state, and a few were shot, but their freedom had not improved them as an article of food. Close to the anchorage is the extinct volcano of Rano Kao, which is about 1200 feet in height, and has a most regularly formed crater nearly a mile across. Up to about seven or eight hundred feet from the top it contains water, with a thick covering of green vegetation so strongly interlaced that any one acquainted with the paths can cross; but as there are open spaces of water and some very weak spots in the covering, nearly every year some one is lost, and cattle are frequently drowned. One of these water-spaces was sounded with 300 feet of line, but no bottom was obtained. The only birds I saw in the crater were three ruddy-coloured Geese, but I was unable to get anywhere near them. I also saw a tame *Anous stolidus* in one of the houses, so it is probable that this species frequents the island.

Ducie Island, in about 26° S., which was visited on the 16th March, is a very dangerous atoll, having a sandy beach with some clumps of bushes, not more than 40 feet high, on its northern side; and a barrier-reef, over which a very heavy surf was breaking, fringes the remainder. The lagoon is very shallow, and has a few passages suitable for boats in calmer weather. Landing was effected on the northern side, where the British barque 'Arcadia' was laying a total wreck, having most likely gone on shore during night or thick weather. The Red-tailed Tropic-bird, *Phaëthon rubricauda*, was breeding in great numbers, and our blue-jackets enjoyed themselves greatly in collecting eggs and bundles of the red tail-feathers. The latter operation was rendered easy; the birds being without guile, allowed themselves to be lifted up by the feathers, and their own weight did the rest. *Anous stolidus* and *Gygis candida* were also obtained, and there was also a large Petrel, only the eggs of which I secured.

Pitcairn Island, the happy home of the descendants of the mutineers of the 'Bounty,' in about 25° S., is a thing of beauty to look on after a long sea-voyage, and does not, as is often the case, lose its charms on closer inspection. In its warm moist climate vegetation runs riot, which is perhaps rather providential, as, whether from climatic enervation or from finding that food comes without toiling, the inhabitants are a lazy, good-natured, happy people. Landing is generally unpleasant, as, with any swell, there is no sheltered place; they have, however, two large whale-boats, in which they manage to land the visitor, safe, if not dry. Here, on the 18th March, I found *Anous stolidus* and *Gygis candida*, but not breeding. The natives, however, say that both species breed on the island—the latter, which is appropriately named the "White-bird," in September—and that when the young are strong enough, they all go away till next year.

Sandwich Islands, September 1884. The Golden Plover, *Charadrius fulvus* arrives in great numbers about the latter end of August in this group. In the island of Hawaii, on the hills above the renowned volcano of Kilauea, there are still fair numbers of Hawaiian Geese, *Bernicla sandvicensis*, and I have seen several in a tame state in Honolulu. It is to be regretted that many of the bright-plumaged birds of the Hawaiian group have become nearly, if not quite, extinct, their feathers being not only used as decorations, but some of the rarer kinds forming a part of the regalia. Some very handsome mantles made of orange-yellow feathers of a small bird (*Moho*) are worn on state occasions, and *leis*, or garlands, composed of feathers are worn round the neck or as a hat-band. Choice flowers are also used for this purpose, and at entertainments in Hawaiian fashion the guests are always decorated with these wreaths, which are made by stitching the flowers on cloth. It is a very pretty custom; but as *leis* made out of valuable feathers, although only about two inches in width, command such high prices as $50, or about £10, it is easy to imagine how soon the handsome-plumaged birds have become exterminated. Mr. Bishop, a banker in Honolulu, has a case of these birds, some of them now very rare.

During the months of October and November 1885, the

Fanning group of islands, lying between 150° and 160° W. long., were visited. Proceeding south from Honolulu, we anchored at Washington Island, but only remained three hours, as, although we were in 50 feet of water, the natives said that, with any wind and swell, it would be breaking at our anchorage. *Anous stolidus* was the only bird shot here. The population consists of one white man and thirty natives; and copra, or the dried kernel of the cocoa-nut, is exported.

Fanning Island is a pretty atoll, being fringed with a sandy beach, on which are numbers of cocoa-nut trees. A portion of the lagoon is quite shallow, but there is a deep entrance and sufficient mooring-ground to accommodate a few very large ships; the tides are, however, exceedingly strong. The inhabitants consisted of four whites and twenty-one natives, occupied with the exportation of guano. *Anous stolidus* and *Gygis candida* breed here, and the lagoon is filled with numerous brilliantly-coloured fishes, amongst which the peculiarly-marked *Acanthurus achilles* and *Julis lunaris* may be mentioned.

Christmas Island, reached on Oct. 6th, is a very large atoll, shaped like a horse-shoe, with the toe to the eastward. The N.W. heel of the shoe, if it may be so described, is a sandy spit on which the few inhabitants, consisting of one white man and five natives, live, and export black-edged pearl-shells. Quite close to their houses I shot two of the little Grey Noddy, *Anous cæruleus,* and I picked up an egg, which from its small size and appearance, must have belonged to that species. Being told of a breeding-place about five miles on the north side of the lagoon, I pulled over there in a heavy shower of tropical rain, and found it to be a large "wideawake fair." *Sterna fuliginosa* was breeding there in great numbers, and we collected buckets-full of eggs, off which we had in most cases to push the birds. A few pairs of *Phaëthon rubricauda, Fregata aquila,* and *Sula fusca* were also breeding; but there was not a sign of the little Grey Noddy, whose large breeding-place I was so anxious to discover. One of the natives, however, volunteered to pilot me next day to a small island about ten miles, he said, in the lagoon, and where, according to his account, the Grey Noddy was breeding in great numbers, but unfortunately we sailed next morning. It was here that F. D. Bennett* first found and described this little-known species.

Jarvis Island has been worked for guano; but the works have been abandoned on account of its inferior quality. We found a cat in possession of the house, and signs of the inhabitants not having long evacuated the premises. Malden Island is the most extensively worked for guano, eight white men and one hundred and sixty natives being employed. No birds were seen at either of these islands. In passing Starbuck Island on the 15th October, I could see a "wide-awake fair" from the ship, and landing was attempted in a life-gig; but the risk was too great, especially as the sharks were in strong force and, actuated either by rage or hunger, snapped at the blades of the oars as the boat neared the reef. One *Sterna fuliginosa* was shot from the boat for identification. At Caroline and Flint Islands no birds were obtained, the former having five human inhabitants and the latter, apparently, none.

At Vostôk, which was also uninhabited (22nd Oct.), I obtained two specimens of the small Black-cheeked Noddy, *Anous melanogenys,* and some of their eggs. At Penrhyn Island (25th Oct.) no birds were observed. This island principally supplies the others with natives for labour, having a population of three whites and 370 natives exporting black-edged pearl-shells and copra. A tour of the Hervey or Cook group completed this trip, so far as these islands were concerned; and as no anchorage was found at any of the six visited, our stay was short, and no information could be obtained.

Christmas day 1884 was spent at Juan Fernandez, an island which might be to South America what Madeira is to England. At present it is only used for stock-raising, but enterprise may some day utilize it as winter-quarters; and apart from its associations, it might become a charming resort. Humming-birds are numerous, there being two kinds on the island, viz. *Eustephanus fernandensis* and *E. galeritus.* Fish are very plentiful; any number of cray-fish may be caught; and there is splendid covert for game if introduced.

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* Narr. Whaling-Voy. round the Globe, ii. App. p. 248 (1840).

In concluding these notes, I regret exceedingly that they are so meagre, and that they principally refer to sea-birds, which is not surprising, considering that my life leads me mostly amongst them. It is true that in the necessarily short visits to many places I have been unable to collect or make observations except in a cursory manner; but I still reproach myself with many opportunities lost, and I would especially warn any one collecting against procrastination in shooting specimens. Nothing in this case is so fatal as to put off to to-morrow what can be done to-day.

I have to tender my sincere thanks to Mr. Howard Saunders for kindly revising and assisting me in these notes *.

XXI.—*On a Collection of Birds from Foochow.*

By F. W. Styan, F.Z.S.

The following notes refer to part of a collection made by Mr. J. D. de la Touche, between December 1883 and September 1886, in the neighbourhood of Foochow, south China. The portion sent home consists entirely of land-birds, and contains no game-birds, Pigeons, Crows, Jays, Starlings, or Finches except Buntings — families which, together with the water-birds, will perhaps be examined and described at a later date. The cases already received contain 828 skins, belonging to 143 species, and comprising five which have not hitherto been recorded from the mainland of China. Of these, *Nisaëtus fasciatus* and *Haliaëtus leucogaster* are entirely new to the Chinese avifauna; *Graucalus rex-pineti* and *Alcippe morrisonia* have only been found in Formosa; and *Hemixus castanonotus* was supposed to be confined to the island of Hainan. The rare *Microhierax sinensis* and *Lanius fuscatus* are also represented.

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* [The indebtedness is on the other side, for an interesting collection of specimens of most of the species mentioned in this paper.—H. S.]

Mr. de la Touche has kindly sent me his notes, which have been compiled with great care, largely enhancing the value of the collection, and from these I have quoted freely. The following are the principal localities mentioned :—

Ching Feng Lung, a village situated high up among the hills, some 100 miles N.W. of Foochow.

Laokee, the wildfowl shooting-ground south of Wofou Island, at the mouth of the river.

Lien Chiang hsien, a city on the banks of a river which flows into the sea a few miles north of the river Min.

Peling, the hill-country about 8 miles north of Foochow, the elevation being from 1000–2000 feet.

Shinkow, a village on the Min, about 60 miles W. of Foochow.

1. Merula mandarina (Bp.).

"Abundant in the district."—J. D. T.

2. Merula chrysolaus (Temm.).

"I found it abundant last April, in small flocks in wooded places."—J. D. T.

3. Merula hortulorum (Scl.).

"Seems rather uncommon here; I shot two in the winter 1884–85, and bought a third from a native, February 1886." —J. D. T.

4. Merula obscura (Gm.).

"Very common in November 1884. I have specimens shot at Peling early in May, but have not seen it in the plains during spring."—J. D. T.

5. Merula pallida (Gm.).

"Winters here, and is extremely common during March and April."—J. D. T.

6. Merula naumanni (Temm.).

"Abundant in March; have shot one 30th November."—J. D. T.

7. **Merula fuscata** (Pall.).

"Extremely abundant at the end of February and throughout March."—J. D. T.

8. **Merula cardis** (Temm.).

Three males, showing well the changes in the plumage, and a female.

a. (16th November.) An adult male, but with a touch of white on the chin and a good deal of chestnut remaining on the under wing-coverts, though the axillaries are grey. Under tail-coverts washed on the sides with dusky grey, as also the flanks. Spots on breast and sides large but faint.

β. (4th November.) Not so fully adult. General colour blacker; traces of white on chin and throat; under wing-coverts chestnut, axillaries partially so; no grey wash on flanks and under tail-coverts, which are pure white; spots on breast numerous, very large and black, and extending down over the flanks.

γ. (3rd April.) Younger male. General colour browner; neck, breast, and flanks spotted with dusky brown; faint touch of rufous on sides of body; under wing-coverts and axillaries chestnut, the latter with grey centres.

"Not common in the neighbourhood."—J. D. T.

9. **Geocichla varia** (Pall.). February.

10. **Myiophoneus cæruleus** (Scop.).

"A common resident among the hills."—J. D. T.

Three males and three females. In two of the former the tail, as is usually the case, is considerably longer than that of the females; in the other male it is about equal to theirs.

11. **Monticola solitaria** (Briss.).

12. **Monticola cyanus** (Linn.).

A series of 22 skins belonging to these two species, which undoubtedly interbreed in South China. Of these, 9 are males of *M. solitaria* in various stages of plumage; 2 are females, probably of the same species; 4 are adult males of *M. cyanus*; 1 is an intermediate form, the *M. affinis* of Blyth; the last is a male killed in February, and has a blue belly with only slight traces of chestnut, but bright chestnut under tail-coverts with only slight traces of blue. The remaining six specimens are young birds in spotted brown plumage and may belong to either species.

13. COPSYCHUS SAULARIS (Linn.).

14. DRYONASTES PERSPICILLATUS (Gm.).

"I found a nest on 11th July last, in a wood on the hills. It was placed on the extreme tip of the branch of a small tree about ten feet above the ground, and was so situated that even a cat would have had great difficulty in getting at it. The eggs, four in number, were quite fresh, of a white colour with rough shell; when blown they turned bluish white. The nest, made of flexible twigs and fine long roots, was very securely fastened to a number of small adjoining twigs."—J. D. T.

15. DRYONASTES SANNIO (Swinh.).

September, November, December, March.

16. TROCHALOPTERON CANORUM (Linn.).

17. POMATORHINUS STRIDULUS, Swinh.

Five specimens, of which three are typical adults. The other two are apparently immature; both were shot in February: one has the breast-streaks of the same russet-brown colour as the underparts; the second has some of the breast-streaks of this colour.

"Very abundant in Peling, near To Feng Sen. I have also met with it near Lien Chiang hsien. Some eggs of this species were obtained at Peling early in May; they were pure white and very glossy."—J. D. T.

18. PARADOXORNIS GUTTATICOLLIS, David.

Peling, May; and Ching Feng Lung, November.

19. SUTHORA SUFFUSA, Swinh.

A single specimen only, from Puching.

20. Cinclus pallasi, Temm. December.

21. Henicurus sinensis, Gould.

22. Henicurus schistaceus, Hodgs.

23. Microcichla scouleri (Vigors).

24. Pratincola maura (Pall.).
All in winter plumage, the males with very rufous rumps and underparts.

"Common from October to May, especially abundant in the former month."—J. D. T.

25. Oreicola ferrea (Hodgs.).
"Common on the hills throughout the winter."—J. D. T.

26. Ruticilla aurorea (Pall.).
"Arrives towards the end of October, and remains till March. In the winter the females seem scarcer than the males and leave, I believe, some time after them."—J. D. T.

27. Erithacus cæruleculus (Pall.).
"Winters in the district."—J. D. T.

28. Erithacus calliope (Pall.).
A fine adult male shot 27th April.

29. Phylloscopus tenellipes, Swinh. May, October.

30. Phylloscopus coronatus (Temm.). 12th April.

31. Phylloscopus borealis (Blas.). May, September, October.

32. Phylloscopus superciliosus (Gm.).
Ten specimens, dated from October to March.

33. Phylloscopus proregulus (Pall.).
Eight specimens, dated November to March.

34. Acrocephalus orientalis (T. & S.).
Dated May to October.

35. Acrocephalus bistrigiceps, Swinh.
Dated April to November.

36. Lusciniola fuscata (Blyth).
February, April, May.

37. Lusciniola schwarzi (Radde).
Herbivocula flemingi (Swinh.).
One specimen, dated the 13th December.

38. Locustella certhiola (Pall.).

"Abundant in the paddy-fields, among the rice, from the beginning of September till, I believe, the end of October, or at least till all the rice is cut."—J. D. T.

39. Locustella ochotensis (Midd.).
May, June, September.

40. Cettia canturiens (Swinh.). February.

41. Cettia fortipes (Hodgs.).

"I found it common at Foochow in February and March, at Peling in January and February, and near Lien Chiang hsien in December."—J. D. T.

42. Cisticola cisticola (Temm.).

A series of nine skins of the large eastern form of this species.

"Abundant in December on the banks of the Lien Chiang river, several shot at Laokee on 24th March and 10th April, and several noticed in autumn near Foochow."—J. D. T.

43. Suya crinigera (Hodgs.).
Suya striata, Swinh. June.

44. Prinia inornata, Sykes.
Drymœpus extensicauda, Swinh.

"One of the commonest residents in the neighbourhood. It is found in autumn in the paddy-fields when the rice is getting ripe, and in winter in all sorts of situations. In the spring it returns to the neighbourhood of creeks and ponds, and nests there among the reeds. On the 21st June I found a nest in some reeds overhanging a small pond. It was bean-shaped, made of fine grass beautifully woven together, and was fastened to the reeds by blades of grass. The opening, situated in the side near the top, was made in the shape of an arch, the upper part of the nest somewhat overhanging it so as to form a sort of awning; it was without lining of any kind. There were six young birds, quite naked."—J. D. T.

45. Burnesia sonitans (Swinh.). November, February.

46. Sutoria sutoria (Forster).

Orthotomus longicauda, Strickl.

Two adult males, dated May, have fully developed central rectrices; one, dated April, is just developing them, and another, dated 17th November, has them very slightly in excess of the rest of the tail.

47. Acredula concinna (Gould).

Among the series are six young birds dated 4th May; they have the crown of the head pale buff, the black sides of the head as in adult, chin, throat, and neck white, and a thin broken black band across the upper part of the breast, below which the underparts are pale buff. Some of them are commencing their first moult and assuming the chestnut crown of the adult, but show no signs of change on the underparts.

48. Parus minor, T. & S.

49. Parus cinereus, Bonnat. & Vieill.

Seven specimens, of which only two have an absolutely pure grey back. The others are the *P. commixtus* of Swinhoe, a form intermediate between this species and *P. minor*, and doubtless the result of interbreeding. In four of them only the very faintest tinge of olive can be detected; on the remaining one the mantle is so green that the bird might with equal justice be attributed to *P. minor*.

50. Sitta sinensis, Verr.

Four specimens were collected by Mr. Baun, of the Imperial Chinese Telegraph Company, near Puching, in the north of Fokien, some 300 miles from Foochow. I have not been able to compare them with other specimens, but judging from description I have no doubt that they belong to this species. The British Museum posesses no example of it, but Dr.

Gadow (Cat. Birds B. M. viii. p. 348) gives *S. sinensis* as a synonym of *S. cæsia,* perhaps without having examined Chinese examples.

The four specimens—two males and two females—I have compared with a long series of *S. cæsia,* and find them much smaller in all their measurements, especially in the much shorter and weaker bill, which equals that of *S. himalayana.* They have less white on the throat than *S. cæsia* and are more rufous on the underparts, especially the sides of the neck.

51. Leiothrix luteus (Scop.).

One bought alive.

52. Alcippe brunnea, Gould.

53. Alcippe morrisonia, Swinhoe.

Ten specimens, dated January, May, November, and December. This species appears to have been previously found only in Formosa, where Swinhoe met with and described it.

"Common at Peling, in country just below Shinkow, and in the valley of the Yung Fu river."—J. D. T.

54. Stachyridopsis ruficeps (Blyth).

Stachyris precognitus, Swinh.

Shinkow and the valley of the Yung Fu river.

55. Motacilla lugens, Pall.

An adult male in full breeding-plumage, dated 27th March.

56. Motacilla leucopsis, Gould.

An interesting series of twenty skins in various stages. The colour of the back in the winter plumage of adult birds seems to be very uncertain. Of nine adults killed in autumn and winter, one September and two October birds have little or no black on the back, two other October and one December birds have partially black backs, another December bird has a pure black back, and two February ones are no blacker than the darker October birds. From this it would seem that after the breeding-season the black back is lost, and reassumed at an uncertain period during the winter or following spring. This does not agree with the opinion expressed by

Mr. Sharpe (Cat. Birds B. M. x. p. 485) that the old birds having once obtained their black back, never lose it again in the winter. One specimen killed in October has only a slight trace of the pectoral black band—apparently an individual peculiarity.

57. Motacilla ocularis, Swinhoe.
April, October, November, December.

58. Motacilla melanope, Pall.
Five specimens, all of which have the short tail peculiar to the eastern race. April, November, December.

59. Motacilla flava, Linn. May, September.

60. Motacilla taivana (Swinh.). April, December.

61. Anthus maculatus, Hodgs.
A. agilis, Swinhoe (nec Sykes).
February, April, November.

62. Anthus japonicus, T. & S. December, March.

63. Anthus cervinus (Pall.).
March, April, May, October, December.

64. Anthus gustavi, Swinh.
A pair dated May.

65. Anthus richardi, Vieill.
A series of twenty skins; six of them killed in October, one being in very fine plumage, having just completed its moult; three others killed in the above month, with one in March and another in April, are all in process of moult.

66. Hypsipetes leucocephalus (Gm.).
Three males killed 28th February and 7th March. Two are not quite adult; the feathers of the lower parts are slightly edged with white, especially on the abdomen and under tail-coverts; the black of the lower parts extends up over the breast, and in one of them partially on to the throat. The third specimen is more immature, the lower parts being dusky brown.

67. Pycnonotus sinensis (Gm.).

68. Hemixus castanonotus, Swinh.

This species was discovered by Swinhoe on the island of Hainan, and has not hitherto been met with on the mainland.

"I met with these Bulbuls in Peling on 15th and 16th February 1885, in a belt of bamboos and trees some twelve miles from Foochow. They seemed to me to have much the same habits as the common species (*H. sinensis*); but their voice is different, and their larger size and the absence of the white on the head easily distinguish them at a distance."—J. D. T.

69. Spizixus semitorques, Swinh.

70. Oriolus diffusus, Sharpe.

"Arrives here towards the middle of April and remains till October."—J. D. T.

71. Buchanga atra (Herm.).

Dicrurus cathœcus, Swinh.

Five specimens, killed in September and October, are all immature, with white edging to feathers of lower parts and under wing-coverts.

72. Buchanga leucogenys, Walden.

Eight specimens, of which the females are duskier than the males, with a distinct greenish "shot" on the upper parts, which is hardly distinguishable in the latter.

"One of the commonest birds of the district during summer. Arrives about the middle of April, and begins to mate soon after its arrival; leaves towards the end of September. The old birds begin to moult at the beginning of August and the young are then quite full-grown."—J. D. T.

73. Chibia hottentota (Linn.).

C. brevirostris, Swinh.

"Shot on the bank of the Yung Fu river among the orange-groves, on 16th and 19th September; others were about; noticed also in Peling in May."—J. D. T.

74. Pericrocotus cantonensis, Swinh.

"These Minivets arrive in large numbers towards the end of March or beginning of April. Soon after arrival they begin to mate, and establish themselves on the large trees on Nantai and the mainland; they remain till the end of September."—J. D. T.

75. Graucalus rex-pineti, Swinh.

A single unsexed specimen, either female or immature male, shot on 11th January, on some low hillocks under the Kushan range. This is another species described by Swinhoe from Formosa, but not hitherto met with on the mainland.

"The cry of this bird was a loud metallic 'Courlik,' 'Courlik'."—J. D. T.

76. Lanius schach, Linn.

"Very common during autumn, winter, and early part of spring; from the end of March it is but seldom met with, and begins to get common again towards the beginning of August. I shot a young bird on 11th July last. The moult takes place in October."—J. D. T.

This partial migration is very noticeable at Shanghai, the birds being scarce in summer, but arriving in large numbers in August and September. How far north they go in the summer is doubtful; Père David says that they never reach Pekin.

77. Lanius fuscatus, Less.

"Father Li, one of the native priests of the Catholic Mission, shot a specimen of this rare Shrike on the 3rd March 1886, on the bank of the creek leading into the city, and very kindly sent it to me. Iris dark brown; bill and feet black."—J. D. T.

78. Lanius lucionensis, Linn.

A series of nine adult and nineteen immature specimens, killed in August, September, and October.

"Arrives towards the end of August and is common throughout September. It occasionally occurs during the winter; for I shot one on the 21st January."—J. D. T.

79. Alseonax latirostris (Raffl.).

"The commonest of all the Flycatchers in this district; it is seen in spring and autumn, and I have shot one on 24th

January. The spring passage lasts about two months, from the end of March to the beginning of May; the birds at that season are generally in bad plumage. The autumn passage occurs during September, October, and November, and all the birds are then in fresh and bright plumage."—J. D. T.

80. Hemichelidon ferruginea, Hodgs.

One specimen, killed on 3rd April.

81. Muscicapa griseisticta (Swinh.).

"Common during its autumn passage in October and November. I have not seen it in spring."—J. D. T.

82. Poliomyias luteola (Pall.).

"Abundant in November."—J. D. T.

83. Tarsiger cyanurus (Pall.).

"Arrives towards the middle of November and remains till about the end of March."—J. D. T.

84. Xanthopygia fuliginosa (Vig.).

"A common bird in winter on some of our mountain torrents."—J. D. T.

Although included among the Flycatchers by Mr Sharpe, on account of its structure, this bird is in its habits and mode of life a Rock Chat.

85. Xanthopygia cyanomelæna (Temm.).

"The spring passage takes place in April, and towards the middle of the month these birds are common enough in certain places. In autumn I have shot it in November."—J. D. T.

86. Xanthopygia narcissina (Temm.).

Three males and a female, killed in April; only one of the males has nearly assumed full plumage.

"Not rare during its spring passage, which lasts from about the middle of April to the beginning of May. A young male was shot on 22nd August."—J. D. T.

87. XANTHOPYGIA TRICOLOR, Blyth.

One, labelled "male, 22nd August," is in the plumage of an adult female.

88. TERPSIPHONE INCII (Gould).

"Not uncommon during the spring passage. I saw it in the spring of 1885 from the 26th April to the 17th May, and also in the following September."—J. D. T.

89. HIRUNDO GUTTURALIS, Scop.

"Arrives here towards the beginning of March. I have seen small parties evidently travelling in September and October."—J. D. T.

90. HIRUNDO JAPONICA, T. & S.

"Not at all abundant; is seen in April in company with the House Swallow."—J. D. T.

91. HIRUNDO SUBSTRIOLATA, Hume.

Two immature specimens shot out of a large flight on 31st November appear to belong to this larger race. They are moulting and have pale buff tips to the new inner secondaries, but not on the wing-coverts; the external rectrices, which have not yet been moulted, are full-sized.

92. COTILE RIPARIA (Linn.).

Five specimens shot in November; seen also in spring.

93. DICÆUM IGNIPECTUS (Hodgs.).

"To be found all through the winter, usually only one or two together, but occasionally in some numbers."—J. D. T.

94. ZOSTEROPS SIMPLEX, Swinh.

In the Cat. Birds B. M. ix. p. 166, Swinhoe's name is given as a synonym of *Z. palpebrosa* of India. In this, however, I am unable to follow Mr. Sharpe, for among the Indian skins in the British Museum I can find none that cannot at once be distinguished from the Chinese bird by its golden-yellow instead of greenish upper parts. Mr. Oates's specimens from Lower Pegu belong to this and not to the Indian species, and one specimen from Yunnan belongs to the

Indian species, so that it seems that the eastern and western limits of the respective species cross one another.

Among the Foochow series are six specimens shot in March and April, which differ considerably from the rest in having the whole plumage much more dusky. The green of the upper parts is much less bright; the yellow on the throat and under tail-coverts is pale and dull; and the breast and lower parts are entirely dusky-brownish grey, with only faint traces of the pale buff on the flanks and the yellow wash on the centre of the belly. The specimens are not in very good condition, and the plumage appears worn; I therefore hesitate to separate them specifically without further evidence. Mr. De la Touche, however, writes as follows:—"My shooting-boy shot these six on the 29th and 30th March; a female which I shot last year on the 14th April is, I think, of the same species. All these birds were breeding, and apparently fully adult."

One specimen similar to the above, and from the same locality, but without date, is in the British Museum.

95. Emberiza spodocephala, Pall.
November, December, February.

96. Emberiza sulphurata, T. & S. April.

97. Emberiza fucata, Pall. May, December.

98. Emberiza pusilla, Pall. January.

99. Emberiza ciopsis, Bp. February, March, August.

100. Emberiza aureola, Pall. October.

101. Melophus melanicterus (Gm.).
A handsome pair killed in February.

A specimen of *Melanocorypha mongolica* (Pall.), shot on 31st March, is in the collection, but had undoubtedly escaped from confinement, this being a favourite cage-bird with the Chinese.

102. Caprimulgus jotaka, T. & S. September.

103. Picus cabanisi, Malh.

Ten specimens with dark-brown underparts, agreeing with birds from the Yangtse valley. One is remarkable in having large spots of white on the ends of the scapulars, which are slightly tipped with black, and in having the rump irregularly barred with white. Mr. Hargitt agrees with me in considering this only an individual peculiarity. He also tells me he considers *P. cabanisi*, *P. luciani*, *P. gouldi*, and *P. mandarinus* to be one and the same species; and having been unable to examine the various types myself, I follow his suggestion and adopt the old name.

104. Iyngipicus scintilliceps (Swinh.).

Four specimens identical with one from Hankow, Central China. Mr. Hargitt, who has kindly examined them, finds that they differ somewhat from the North-China specimens, principally in the more distinctly barred external rectrices, in which they show an affinity to *I. kaleensis* (Swinh.).

105. Gecinus guerini (Malh.).

A series of six, agreeing perfectly with my specimens from the Yangtse valley, which have the black occiput and moustache quite as strongly marked. Mr. Hargitt considers that the southern form, *G. tancola*, Gould, cannot be specifically separated.

106. Micropternus fokiensis, Swinh.

Two males and three females.

"This species is not common here, but I have obtained several from natives, who said they had shot them on the hills, and I killed one myself on 1st March, 1885."—J. D. T.

107. Iynx torquilla, Linn.

"Is rather uncommon, but seems to pass regularly in spring and autumn."—J. D. T.

108. Upupa epops, Linn.

109. Eurystomus orientalis (Linn.).

"Arrives towards the end of April and leaves towards the end of September or beginning of October. Young birds about two-thirds grown were brought me on 2nd July, and

I saw others about the same size on 6th August. They had the upper mandible of the bill black, rimmed with yellow, and the lower mandible reddish; the feet were dark red above, and the blue patch on the throat was wanting, while the general colouring was not so bright as that of the adult." —J. D. T.

110. ALCEDO BENGALENSIS (Briss.).

111. CERYLE RUDIS (Linn.).

112. CERYLE GUTTATA, Vig.

Two specimens, in which the wing measures 7¼ inches.

"A rare bird in this district, but probably less uncommon in the interior."—J. D. T.

113. HALCYON SMYRNENSIS (Linn.).

114. HALCYON PILEATUS (Bodd.).

115. CUCULUS CANORUS, Linn.

Two immature specimens, killed in September, of the small pale form, with very narrow bands on the lower parts.

116. CUCULUS MICROPTERUS, Gould.

Two immature birds, killed in October, with a great deal of black on the head and throat, which is gradually being replaced by grey, are, I believe, the young of this species.

117. CENTROPUS SINENSIS (Steph.).

"Resident and common."—J. D. T.

118. CENTROPUS BENGALENSIS (Gm.).

"I have bought two of these birds; it is probably rare here, as I have never come across it myself."—J. D. T.

119. MEGALÆMA VIRENS (Bodd.).

"Resident in the Peling country, and three were shot for me on the hills bordering the river Min, between Foochow and Shinkow."—J. D. T.

120. SCOPS ELEGANS (Cass.).

"I do not think these Owls are particularly common here. I heard one at Ching Feng Lung in the middle of November and on the 18th April. A native shot a young male on

Kushan, and an inhabitant of a village near by told us there was a pair of them breeding there. I bought a young one on the 3rd June, which I successfully reared."—J. D. T.

121. Ninox scutulata (Raffl.). *N. japonica,* Swinh.

Two specimens, obtained in May.

122. Glaucidium whitelyi (Blyth).

"A very common resident."—J. D. T.

123. Asio accipitrinus (Pall.).

"Common from autumn to spring."—J. D. T.

124. Pandion haliaëtus (Linn.).

"Often seen on the river and about the coast during the winter; some remain throughout the summer."—J. D. T.

125. Circus cyaneus (Linn.).

"Females and young males are very common from the end of October till the spring; adult males are rare, and I have not yet even seen one."—J. D. T.

126. Circus melanoleucus (Forster).

A single female only, dated 15th November.

127. Circus spilonotus, Kaup.

A fine series of ten skins, including two brown females with sharply defined bars on the tail, assigned by Mr. J. H. Gurney to this species.

"Passes here during March and April, and again during October and November."—J. D. T.

128. Circus æruginosus (Linn.).

"A common bird during winter; arrives in October."—J. D. T.

129. Buteo plumipes (Hodgs.).

Ten specimens, of which eight were killed in December and January, one in March, and one in winter (no date). An example dated 11th January is in normal adult plumage, the others are all pale immature birds.

"Very common in the plains during winter."—J. D. T.

130. AQUILA HELIACA, Savigny.

Three immature birds; one of the two larger ones is labelled male, but in size it equals a female.

"I am told by the native sportsmen that these Eagles are not uncommon in winter on the marshes and paddy-fields adjoining the river, that two or three are sometimes seen together, and that they prey largely on the domestic Ducks, which feed in large flocks on the river and sea-shore. During the winter of 1885–86 I procured three specimens from the natives, and saw the feet of a fourth which had been shot at Laokee and *eaten*! One was killed in November and the other two in January."—J. D. T.

131. NISAËTUS FASCIATUS (Vieill.).

Though not previously recorded in the Chinese list, Bonelli's Eagle is perhaps not uncommon. One was shot near Shanghai last winter, and is now in the Shanghai Museum; and there are two specimens in the collection before me, both, judging by their size, females—one, with broad shaft-stripes on the breast, killed on the 28th November, and the other, apparently a younger bird, with distinct but very narrow shaft-stripes, killed on the 24th December. Mr. De la Touche has since obtained another one on 14th October, almost exactly similar to the latter specimen.

132. HALIAËTUS LEUCOGASTER (Gm.).

This is another addition to the Chinese avifauna; it is strange that it has not been noticed before on the southern coasts of China. The specimen is an adult male in moult.

"On the 27th July last the native Tsung Yang, who was out with me on a short trip to the sea-coast, shot, on a rocky islet near Wofou Island, this very handsome Sea Eagle. We had to scramble up the rock to get at the bird, which, before we picked it up, we had taken for a large sea-bird on account of its peculiar colouring. We had seen this bird in the morning at daybreak; it flew rather slowly and passed us within shot, alighting half a mile on the sands among a flock of Pelicans, which we had been trying to stalk. As we were preparing to follow it, it rose and went off towards the island, where we afterwards found it perched high up on a rocky ledge."—J. D. T.

133. SPILORNIS CHEELA (Lath.).

Two specimens, one dated 13th October and the other, a fine dark-plumaged female, the 14th March.

"A rarity in this district."—J. D. T.

134. BUTASTUR INDICUS (Gm.).

A fine adult male, dated 26th March.

135. ACCIPITER NISUS (Linn.).

"Common from October to the end of April."—J. D. T.

136. ACCIPITER VIRGATUS (Temm.).

Two females—a young one, dated 30th October, and an adult, with a few slight traces of immature plumage, dated 27th April. Mr. J. H. Gurney tells me these are identical with the Japanese birds, the *A. gularis* (T. & S.) of Messrs. Blakiston and Pryer's list.

137. FALCO COMMUNIS (Gm.).

"Common and generally distributed from the beginning of October to the spring."—J. D. T.

Among this series of Peregrines is an immature bird which may perhaps be the young of the Australian *F. melanogenys,* a species which has been found in South China, breeding as far north as the Yangtse.

138. FALCO SUBBUTEO, Linn.

"Arrives towards the end of April and remains till the end of October; very common, nests on the high pine trees."—J. D. T.

139. FALCO REGULUS, Pall.

"Common during the winter; specimens procured in winter are all females and young males, but I have several adult males procured in March and April."—J. D. T.

140. FALCO TINNUNCULUS (Linn.).

Several specimens of the large and dark race described as *F. japonicus*; the females and young all show traces of blue on the rump.

141. Microhierax sinensis, Sharpe.

A single adult female of this rare little Falcon.

"On the 2nd November, 1886, this specimen, a female in moult, was shot on the banks of the river Min, about 25 miles beyond Foochow by my shooting-boy, who told me that it was perched on a telegraph-pole, and that he also saw another one. He examined the stomach and found it contained insects."—J. D. T.

142. Milvus melanotis, T. & S.

Three immature birds.

"Extremely abundant all over the cultivated country. They begin to breed about February, and nest in clumps of pines near villages."—J. D. T.

143. Haliastur indus (Bodd.).

A single specimen, killed on 22nd August.

"The only one I have ever seen here."—J. D. T.

XXII.—*On an apparently new Species of* Zosterops *from Madagascar.* By H. B. Tristram, D.D., F.R.S.

The distribution of the great Meliphagine genus *Zosterops* is one of the most interesting studies in ornithological geography. Occurring throughout the whole of the Indian, Ethiopian, Australian, and Pacific regions, there are no characters which in the least mark off the "White-eyes" of one region from those of another. Some African, Indian, and Australian species are so closely allied as to be only with difficulty discriminated, e.g. *Z. siamensis, Z. senegalensis, Z. lutea,* from the three regions widest apart. But there is one peculiarity common to all the regions. While the genus may, for convenience, be divided into two groups, the green-and-yellow and the grey-and-white, I am not aware of any of the latter group being found on continental or quasi-continental areas. In the insular areas, on the contrary, we generally find two species, one of each group, and this in the Indian and Pacific Oceans alike. Some of the grey Zosteropinæ from the Pacific have representatives all but identical in the Mascarene Islands: *e. g.* the species of Réunion and of the Pelew Islands, of Mauritius and Ualau Island, are respectively hard to discriminate. Seeing that a grey *Zosterops* specifically distinct from all others is found in each of the Mascarenes, in Mauritius, Bourbon, and Seychelles, and an intermediate form in Comoro, it is curious that none has hitherto been observed in Madagascar.

Some little time ago I purchased a small parcel of bird-skins from Madagascar. Among them was a grey *Zosterops*. A friend who was with me observed that the parcel must have come by way of Mauritius, since *Z. mauritiana* was among them. As we had no specimens for comparison in our pockets, I accepted the criticism, though every other bird was undoubtedly from Madagascar; but on comparing this specimen with birds from all the other islands, I find it undoubtedly distinct. It has two very marked points of difference. It has no white upper tail-coverts like *Z. mauritiana* and *Z. borbonica,* agreeing in this with *Z. modesta* from Seychelles; but it has not the strong bill of *Z. modesta.* The second peculiarity is, that it has the bright ring of silvery feathers round the eye very strongly developed, while in all the other grey species, except that of Anjuan, the ring is either grey, instead of white, or is nearly obsolete. The coloration of the head and back is pale grey, intermediate between the hue of the birds of Mauritius and Bourbon and exactly agreeing with *Z. cinereus,* Kittl., from Kushai, from which, however, it differs in its silver ring round the eye and in its short and feeble bill, which is stouter than in the Mauritius and Bourbon species, but more feeble than in the Seychelles bird. I propose to name it

ZOSTEROPS HOVARUM, sp. nov.

Z. mauritianæ simillima, sed sine uropygio albo, capite et dorso concoloribus, corpore supernè cinereo, paullulum intensiore quam in *Z. mauritiana,* annulo conspicuo plumarum albarum oculos cingente; rostro fortiore et longiore quam in *Z. mauritiana.* Long. tot. 4 poll., alæ 2·2, caudæ 1·7, tars. ·7.

Hab. Madagascar.

XXIII.—*The Polar Origin of Life considered in its bearing on the Distribution and Migration of Birds.*—Part I. By H. B. TRISTRAM, D.D., F.R.S.

THE solution of the various perplexing problems connected with the classification, distribution, and migration of birds may, as it appears to me, be assisted in no slight degree if we view these problems in the light thrown on them by the theory of the Polar origin of all life. In fact, I can find no problem connected with bird-life which is not more easily explained by this theory than by any other. I hope, therefore, that the readers of 'The Ibis' will pardon me if I occupy a few pages with a summary of the general question by way of preface.

However successfully we may classify the distribution of life and sketch the limits of the various regions and areas, yet we cannot find in the most accurate and careful geographical arrangements any clue to the origin or the distribution of bird-life. How is it that while in some families, such as the Thrushes, we find generic identity through the whole world, whole families, and even orders, are confined to one area and absent from others under identical climatic conditions? There is certainly nothing in the *present* distribution of bird-life to explain these phenomena. With so many similarities among so many differences, we cannot assume many original centres of life. We must go back to the original locality of life. It will be granted that life can only have commenced in those parts of the world which were first prepared to maintain it, and that the earth has been a gradually cooling mass, of which those parts which cooled first would be the fittest to maintain life. Now those parts which received the least heat from the sun, and which radiated heat most rapidly into space, must bave been the first to cool. These are the Arctic and Antarctic zones. These zones were at one time too hot, and are now too cold for the life which now inhabits the warmer zones, and they must have passed slowly through all the degrees of temperature fitted for every form of life which exists or has existed on the earth. I confine myself to the North Polar zone exclusively; for while, as I shall presently endeavour to show, the stream of bird-life has been continuous from the North Pole to the most southern regions, there is no evidence of life having been diffused from the South Pole. There are only two forms of bird-life exclusively circumpolar in the southern regions which have not clearly a northern origin, viz. the Sheath-bills and the Penguins. The former are too closely allied in structure to the Oyster-catchers to enable us to found any argument on them; the latter may be the solitary survivors of a South-Polar avifauna.

But the physical conditions of the opposite zones are very different. Sir J. Hooker has remarked that he can find no plants in the Antarctic regions which do not bear indisputable traces of a northern origin, except, possibly, a few lichens and seaweeds. The results of the soundings of our scientific expeditions show that almost the deepest sea-bottoms on the face of the earth girdle the Antarctic continent, and Mr. Murray has pointed out that we have every reason to believe that the deep ocean-depressions have existed since the earliest solidification of the earth's crust. The dredging of this ocean has produced no trace of sedimentary rocks, but only the detritus of primitive or azoic rocks. Now no spaces present greater obstacles to the transit of life than deep oceans. We may infer, then, that, if bird-life did exist on that primitive continent (and it very probably was created there, as well as at the north), when the temperature gradually sank, mammals and birds could have had no escape from the increasing cold, and, having no near lands in which to take refuge, they, with the exception of the Penguin family, ultimately perished.

On one, and only one, hypothesis can the origin of life at the Poles be controverted, and that is that the axis of the earth may have changed, so that the Poles may formerly have been at very different points of the earth's surface. But our greatest mathematicians have examined this theory—first started to explain the existence of the Miocene flora in the Arctic zone—and Sir W. Thompson, Dr. Haughton, Prof. G. Darwin, and others agree that there is no evidence of such change, certainly not during geological history; while at the same time they admit the *possibility* of stupendous land-changes having taken place in the earlier age of the planet, of which we can find no existing evidence.

It is unnecessary to enter on the geologic record of the sequence of the Arctic flora from the Silurian corals to the later Miocene; this has been admirably summarized by Lt.-Col. Feilden in his Presidential Address to the Norfolk Naturalists' Society in 1886. Ornithology cannot afford the like geological evidence with botany, for we know how comparatively rare are ornithic relics. We are therefore in this branch of biology more exclusively dependent on the evidence afforded by the distribution of existing forms.

If we can trace a gradual development from the generalized to the more specialized forms only in passing from north to south, from the North Pole by the great circles of longitude—while if we pass by the circles of latitude round the world we find, until we come to the confines of the arctic zone, that the former are specifically unlike while the climatic conditions are the same—we have the locality of origin clearly indicated. The moment we reach the Arctic zone we are everywhere surrounded by the same species. But if we follow the continental masses of the New World to the South Pole, thence returning up a meridian which crosses Africa and Europe, or Australia and Asia, we shall find in the descent abundant fossil evidence that we are moving onwards by the path along which the prehistoric migrations of the animal-world proceeded, and on our return we shall find that we are moving counter to their obvious movement.

Round the shores of the Arctic Sea the same fauna and flora are found in every meridian. As we pass southward along the three principal lines of land towards the Cape, Tasmania, and Tierra del Fuego, specific identity gives place to mere identity of genera; these are replaced by family resemblances, and at last even the families become in a great measure distinct, not only on the great continents, but also on the islands, till every little rock in the Southern Ocean has its peculiar inhabitants. Thus the living faunas of Patagonia, New Zealand, and South Africa are separated by infinitely wider divergences than those of any more northern regions; therefore these southern continents must have been more or less completely isolated during long periods, both from the northern continent and from each other. It would appear that, north of the equator at least, animals slowly migrated southward, keeping pace, as it were, with the growth and southward extension of the grand land-masses which appeared above the sea as the globe cooled. I have alluded to the identity of forms round the Polar area. We have, for instance, two peculiar forms of the *Laridæ—Pagophila* and *Rhodostethia*—girdling the Arctic circle; so, too, the Turnstone, perhaps the most widely distributed of birds, and many species of *Tringæ*.

But when we come further south we find, along with a steadily increasing divergence, cases of closely allied species recurring at intervals widely apart. Both these facts seem in perfect harmony with the hypothesis of three grand principal lines of migration—Western Europe, Eastern Asia, and Eastern America.

Take as an example the Woodpecker tribe. Here we have the genus *Picoides* confined almost exclusively to the most northern habitats of forest trees. We find one species, with varieties barely, if at all, separable, from Norway eastward to the Rocky Mountains, and others, very closely allied, across the northern belt of America. The next most northerly form of Woodpecker is represented by our *Picus major*. Of this group, the typical *Picus*, there may be from fifty to eighty species, according to the differing views taken by systematists. But whether we look to the European, Asiatic, or American forms, we find a close similarity in the most northerly species; while as we proceed southward the species become more and more distinct, until, before entering the tropics, we have lost the genus altogether. *Picus major* is identical in Britain and Japan; the North-American *P. pubescens* and *P. harrisi* of the west of the Rocky Mountains are not far separate. From each we find further and further divergences till we come to Formosa, Algeria, and

Texas. When on the verge of the tropics we seem to lose the genus.

The next most northerly groups of Woodpeckers are the genus *Gecinus* on the European and East-Asiatic lines of migration, and the genus *Colaptes* on the American line. These groups seem to have left the north before the Picinæ, and to have pushed further southwards. They vary still more from the original type in their southerly migration, especially when they penetrate into the Indian region, as in such species as *Gecinus mentalis* and *G. puniceus*. In the case of *Colaptes* we have the instance of *C. chilensis*, the most divergent and the least differentiated of the group, as if the direct descendant of progenitors who, at a very early period, pushed southward till they reached a climate similar to that of their original home, and thus never became differentiated like those which remained in warmer latitudes. Both *Picus* and *Gecinus* reached the southern shores of the Mediterranean, but never crossed the Saharan Ocean.

All the other families of Woodpeckers, driven southward long before the above-named had left the north, have become more and more segregated, and can at once be classified into the three great groups which have peopled the Indian, Ethiopian, and Neotropical regions. Why not one of them ever crossed the mysterious dividing-line between Bali and Lombock is a problem only to be solved when research shall have revealed to us more accurate knowledge of the conformation of the Indian and Australian areas during the Miocene epoch.

The similarity of the fauna of Japan with that of Western Europe has often been noted, and also the remarkable fact of forms occurring in Japan which do not recur till we reach the west of Europe, while there is no affinity with the avifauna of America. Take as an instance *Cyanopica*. If the Azure-winged Magpie had been wholly or partially circumpolar, we could easily understand one party going down Western Europe and halting in Spain, the other resting in Japan. Of *Pica*, colonies seem to have started down the routes of Europe and East Asia, and a third down the west side of the Rocky Mountains, while some selected the North-

American route. Being a genus unfitted for great heat, it penetrated no further than Algeria, California, and North China, retaining an identity all but specific everywhere, except in the southern limits of its migration to Algeria and California, where the species are markedly distinct.

Of the Jays, *Perisoreus* remains in the Arctic regions, with very slight variations. *Garrulus*, which left earlier, has varied more rapidly as it worked southwards and, like many other families, has never even crossed the Sahara.

I assume that the progenitors of the tropical forms naturally left the north long before those better adapted to endure change of temperature, and thus had an infinitely longer period in which to become more and more differentiated.

I do not pretend to explain how it happens that great families are now restricted to particular regions, while other regions not less fitted, so far as we can judge, for their maintenance are without them: how, for instance, the Humming-birds, the Toucans, the Tanagers, are solely Neotropical; the Plantain-eaters and the Guinea Fowls solely Ethiopian; the Pheasants solely Indian; the Honey-suckers only Indian and Australian; the Sun-birds only Indian and Ethiopian. But the Polar theory seems to give the only possible solution, viz. that their respective ancestors left by one or two routes only, or that the other parties perished early in the struggle for existence. Now the only marked exception to the close similarity—I had almost said identity—of the North-American land-bird fauna with that of the Old World is in one peculiar family, the American Warblers, or *Mniotiltidæ*. Structurally these differ very widely from our Warblers; but they are all migrants, visiting North America only in summer, and we cannot look on them as northern forms at all. They are simply Neotropicals, which have no representatives in other regions, and which have preserved their old traditions of hugging the north as closely as they could, though greatly modified in structure. The hereditary instinct in them has been more permanent than the form. There is also another possible cause, viz. that the North-American continent has been in various parts repeopled from the south after its central mass,—which during the Miocene period was a vast shallow sea-basin, thus quite interrupting any retrocession of the great previous immigration into South America in the Triassic age,—had been upraised and become a vast table-land drained by the feeders of the Mississippi.

I propose to defer to another paper a more detailed consideration of the mode of distribution of many other families, such as the Thrushes, and of the insular avifauna, and especially of the limits and operation of the glacial epoch, premising that I am not prepared to invent glacial epochs as an easy solution of difficulties. I will now only add—what I hope to work out more fully hereafter—that in the Polar origin of life we seem to have a key to that perplexing riddle, the migration of birds.

All ornithologists are aware of the instincts, strong in all species of birds, without exception, which attract them to the place of their nativity. When increasing cold drove the mammals southward, they could not retrace their steps, because the increasing Polar sea, as the Arctic continent sank, barred their way. The birds reluctantly left their homes as winter came on, and followed the supply of food. But as the season in their new residences became hotter in summer, they instinctively returned to their birthplaces and there reared their young, retiring with them when the recurring winter impelled them to seek a milder climate. Those species which, unfitted for a greater amount of heat by their more protracted sojourn in the northern regions, persisted in revisiting their ancestral homes, or getting as near to them as they could, retained a capacity for enjoying a temperate climate, which would gradually be lost by the species which settled down more permanently in their new quarters; and thus a law of migration became established on the one side, and sedentary habits on the other.

XXIV.—*Notices of Recent Ornithological Publications.*

[Continued from p. 119.]

32. '*The Auk.*'

['The Auk,' a Quarterly Journal of Ornithology. Vol. III. No. 4, October 1886; Vol. IV. No. 1, January 1887.]

In the October Part there are, as might be expected, several interesting articles on American ornithology; Mr. Henshaw describes a new Jay, *Aphelocoma insularis*, from Santa Cruz, one of the Santa Barbara Islands, off California; and Mr. Cory continues his list of Birds of the West Indies. His supplementary paper, descriptive of 13 new species from Grand Cayman, has already received special notice in our last issue.(*antea*, p. 124). Dr. R. W. Shufeldt's reproduction of the photograph of an old portrait of Audubon by himself, with remarks upon some of his earlier drawings, will excite interest among those to whom that explorer's works rank as classics. Mr. Lucas has a paper on the affinities of *Chætura*, which has elicited a reply in the January number from Dr. Shufeldt, who has also his hands full with a discussion respecting the classification of the Macrochires with Dr. Stejneger. The observations of Mr. Lucas on the Procellariidæ observed on a voyage round Cape Horn and up the west coast of South America may be compared with the remarks on sea-birds by Mr. S. Swinburne, noticed in our present issue (*infra*, p. 255). Mr. Cory describes (p. 6) *Vireo caymanensis*, sp. n., from Grand Cayman, and suggests the name of *Zenaida richardsoni* for a Dove from Little Cayman, in case it should prove distinct from *Z. spadicea*; he also continues (p. 37) his list of the Birds of the West Indies. Mr. G. B. Sennett describes (p. 28), as new, *Parus atricristatus castaneifrons* and *Parus bicolor texensis*, both from Southern Texas. Dr. Stejneger's further remarks on the genus *Acanthis* will be read with interest by students of the Palæarctic avifauna, and in their hands we must leave this group of Linnets. It is satisfactory to learn that, on the whole, the Reports of the Committee were favourable, especially that on the Migration of Birds, on the occasion of the fourth meeting of the American Ornithologists' Union; and we note with pleasure the amount of energy in collecting displayed on the other side of the water. Mr. M. A. Frazar is on his way to explore the peninsula of Lower California and the adjacent islands for Mr. Brewster; Mr. Charles H. Townsend has sailed for Yucatan under the auspices of the U.S. Fish Commission; and Mr. Herbert H. Smith has returned from Brazil with about 7000 specimens of 450 species, principally from the little-known Brazilian Province of Matto Grosso, on the head waters of the Paraguay River.

33. *Barboza du Bocage on Dupont's Lark in Portugal.*

[Note sur la découverte en Portugal d'une variété de la *Certhilauda duponti*. Par J. V. Barboza du Bocage. Jorn. Soc. Lisboa, no. xliv. p. 3 (1887).]

The discovery of a supposed variety of Dupont's Lark, apparently *resident* on the south side of the Tagus, opposite Lisbon, is very interesting. Hitherto the occurrence of this African form in the Iberian Peninsula rested upon three specimens, all young birds obtained in the month of November of various years, near Malaga, and sent to Saunders by his excellent collector the late Don Fco. de los Rios. As Dr. Barboza du Bocage has already obtained three specimens, we shall probably hear more about this species or variety ere long. It is distinguished as *Certhilauda duponti*, var. *lusitanica*.

34. *Belgian Ornithological Report.*

[Compte Rendu des Observations Ornithologiques faites en Belgique pendant l'année 1885. Bull. Mus. Roy. d'Hist. Nat. de Belgique, iv. pp. 177–210.]

Dr. Alphonse Dubois, who signs this Report, has received assistance from brother ornithologists at Brussels, Hasselt, Carlsbourg, the Blankenberghe, Knocke, Ostend, and Nieuport lighthouses, and some minor localities. The observations, principally but not entirely on migrations, are, so far, of considerable interest, and refer to 171 species; but Dr. Dubois hopes to have more extended aid in following years, and to increase the list. The systematic arrangement is certainly peculiar, commencing with the Picariæ, followed by the Passeres, after which come the Columbæ, then Striges and Accipitres, Gallinæ, and so on.

35. *Bianchi on a new Shrike.*

[Ueber einen neuen Würger aus der Untergattung *Otomela* (*Otomela bogdanowi*). Von V. Bianchi. Bull. Acad. Imp. d. Sci. St. Pétersb. xxx. p. 514 (1886).]

Otomela bogdanowi was discovered by Herr Nikolski in the province of Astrabad, in Northern Persia. It is allied to *O. romanowi* (*O. phœnicuroides*, subsp. *romanowi*, Bogd.), described in parallel columns with it, which is also found in the same district.

36. *Bianchi on the Birds of the Western Pamir.*

[Zur Ornis des westlichen Ausläufer des Pamir und des Alai. Von V. Bianchi. Bull. Acad. Imp. d. Sci. St. Pétersb. xxxi. p. 337 (1886).]

M. Bianchi describes a collection of birds made by M. Grum-Grzimailo, in 1885, in the eastern districts of the Khanate of Bokhara, and placed in his hands by Dr. Strauch. The series consists of 388 specimens (including 10 from the same country obtained by Dr. Rigel), which are referred to 136 species. The greater part of the collection was formed in the western outliers of the Pamir and Alai ranges, only 54 specimens being from the low-lying steppes of Eastern Bokhara. The collection adds 8 species to Severtzoff's previous list of this avifauna (J. f. O. 1875, pp. 168–188). Exact localities, and many interesting notes, are added.

37. *Bogdanow on a new Pheasant.*

[Kurze Bemerkung über *Phasianus komarowi*, n. sp. Von Prof. M. Bogdanow. Bull. Acad. Imp. d. Sci. St. Pétersb. xxx. p. 356 (1886).]

The new species, *Phasianus komarowi*, is from the vicinity of Aschabad, where it is brought to the market in winter. It is probably the same as *P. principalis* Sclater; but *cf.* Seebohm, *supra*, p. 172.

38. *The Bombay Natural History Society.*

[Journal of the Bombay Natural History Society. Edited by E. H. Aitken and R. A. Sterndale. Vol. I. No. 3, July, No. 4, October, 1886.]

We are glad to see that this new Indian journal, which we noticed in our issue for last October (p. 514), is not only continued with commendable regularity, but distinctly improving upon its already satisfactory commencement. In the July number Capt. E. F. Becher's paper "A Sind Lake," with many allusions to birds, is followed by a still more interesting contribution on "The Waters of Western India, British Deccan, and Kandesh," by a Member who retains his incognito, but who is evidently an excellent field-ornithologist as well as sportsman. His second paper in the October number, on the "Waters of the Kondan and Coast," is equally good and will please all classes of readers: we hope he will sign his name to his next article. Mr. J. Davidson, C.S., has a paper on "Birds'-nesting in the Ghats," and Mr. H. Littledale has a contribution on the "Birds of South Gujerat."

39. *Booth on British Birds.*

[Rough Notes on the Birds observed during Twenty Years' Shooting and Collecting in the British Islands. By E. T. Booth. With Plates from Drawings by E. Neale, taken from specimens in the Author's possession. Parts X.–XIII. Folio. London: 1886.]

In Part X. the species figured are the House Sparrow, Black Grouse, Red Grouse, Spoonbill, Grey-lag Goose, Scoter (immature), and Smew (immature). In Part XI., the Rock Dove, Snipe, Curlew Sandpiper, Knot, Puffin (Mr. Booth makes no allusion to the shedding of the outer shell of the bill), Roseate Tern, and Little Gull (immature). In an article on the Arctic Tern and on the species which breed on the Farne Islands, Mr. Booth omits the Common Tern from the catalogue, for the very good reason that he was unable to identify that species; but we can assure him that not only was it breeding there in considerable numbers in 1881, but also that Saunders can show him one of a colony snared on its eggs in 1865 (long before the passing of the Sea-birds Preservation Bill, be it remarked, for even in the interests of science ornithologists do not infringe the law !). Part XII. contains plates of Siskins and nest, Common Sandpiper, Little and Temminck's Stints, and Sandwich Tern. In Part XIII. we have the young Cuckoo and the Titlark as foster-parent (an unusually pretty plate), Hoopoe, Golden Oriole, Capercaillie, Stone Curlew (heads only, to show the protuberances on the base of the upper mandible in the adult male, but absent in the female), Heron and young in nest, immature male Gadwall, and Red-necked Grebe in both young and adult winter plumages. As before, Mr. Booth's letterpress is excellent reading, and the articles on the species which are not figured, and which are too numerous for mention, are quite as interesting as the others.

40. *Büttikofer on the Birds of Liberia.*

[Zoological Researches in Liberia. A list of Birds collected by Mr. F. X. Stampfli near Monrovia, on the Messurado River, and on the Junk River with its tributaries. By J. Büttikofer. Notes Leyden Mus. viii. p. 243.]

The efforts of Mr. Büttikofer to collect in Liberia have already had important results, which would have been larger had not the unhealthiness of the climate compelled his return to Europe. His work has been continued by Mr. Stampfli, and the present essay gives an account of the collections sent home by the latter traveller. The locality is one of special interest, as it seems to be the meeting-place of the Senegambian and Gold Coast faunæ, such forms as *Parisoma plumbeum*, *Hirundo lucida*, &c. representing the former, while the predominating element is the Gaboon and Gold Coast type, as is evidenced by such species as *Dryotriorchis spectabilis*, *Scotopelia bouvieri* (not *S. ussheri*, curiously enough), *Campophaga quiscalina*, *Nigrita canicapilla* (not *N. emiliæ*). The new species of Warbler, *Sylvietta stampflii*, has been submitted to Mr. Sharpe, and is pronounced by him to be undescribed.

41. *Büttikofer on Sumatran Birds.*

[On a Collection of Birds made by Dr. C. Klaesi in the Highlands of Padang (W. Sumatra) during the winter 1884–85. By J. Büttikofer. Notes Leyden Mus. ix. p. 1.]

Mr. Büttikofer gives a *résumé* of the labours of naturalists in Sumatra, including those of English and Italian as well as Dutch travellers. The number of species supposed to be peculiar to the island is diminishing as the identity of the avifauna with that of the mountains of Malacca becomes apparent; and Dr. Klaesi seems to have confirmed this fact by the very extensive collections he has made, amongst which are such rarities as *Chloropsis venusta, Myiophoneus melanurus,* and other species as yet peculiar to the island. Mr. Büttikofer describes two new species, *Hirundinapus klaesi* and *Cissa nigricoronata,* both of which seem to us to rest on somewhat slender foundations. The author's critical notes appear to be excellent; and our colleague, Mr. Hargitt, will doubtless be glad to find that Mr. Büttikofer amply confirms his careful researches into the Woodpeckers of the genus *Hemicercus,* published in this Journal for 1884 (pp. 244–259), a monographic essay which the author appears to have overlooked.

42. *Guillemard's Cruise of the 'Marchesa.'*

[The Cruise of the 'Marchesa' to Kamschatka and New Guinea, with notices of Formosa, Liu-kiu, and various islands of the Malay Archipelago. By F. H. H. Guillemard, M.A., M.D. With maps and numerous woodcuts. 2 vols. 8vo. London: Murray, 1886.]

Dr. Guillemard's narrative of the Cruise of the 'Marchesa' will, we are sure, be read with pleasure and instruction by every naturalist. We have seldom seen a book of travel so well got up and so capitally illustrated. Instead of having to turn to an atlas at every chapter, a series of excellent maps introduced into the text enables us to understand perfectly the exact route of the 'Marchesa' in all the strange places she visited, and the accompanying woodcuts by Keulemans and Whymper are veritable works of art.

The 'Marchesa' is an auxiliary screw-steamer yacht of

420 tons, belonging to Mr. C. T. Kettlewell. She left England in January 1882, and visited Kamschatka, Columbo, Singapore, Formosa, the Liu-kiu Islands, Japan, the Sulu Islands, Northern Borneo, Sumbawa, Celebes, the Moluccas, and New Guinea, returning home in April 1884. Large collections of natural history were made in the Malay and Papuan regions, and the birds, which numbered about 3000 specimens, have already been described by Dr. Guillemard in an excellent series of papers read before the Zoological Society of London. Many additional interesting notices of birds and bird-life will be found in the present volume, which we heartily commend to the notice of all ornithologists.

43. *Harvie-Brown on North Rona.*

[Further Notes on North Rona, being an Appendix to John Swinburne's Paper on that Island in the Proc. R. Physical Soc. Edinb. 1883-84. By J. A. Harvie-Brown. *Op. cit.* ix. pp. 284-299.]

Mr. John Swinburne's paper was noticed in 'The Ibis,' 1884, p. 347; and in June 1885, North Rona was again visited by Mr. Harvie-Brown and Mr. Hugh G. Barclay of Norwich. In 1886 Mr. R. M. Barrington stayed three days there, and the collected results of these visits appear in the present appendix, the number of species observed being now increased to 29, against 18 in the former list.

44. *Lilford's 'British Birds.'*

[Coloured Figures of the Birds of the British Islands. Issued by Lord Lilford, F.Z.S. &c., President of the British Ornithologists' Union. Part II., May, Part III., August 1886; Part IV., January 1887. 8vo. London.]

In the three Parts which have appeared since our last notice, more than a year ago, coloured plates are given of the Black-throated Thrush, Desert Wheatear, Whinchat, Stonechat, Lesser Whitethroat, Garden Warbler, Great Reed Warbler, Savi's Warbler, Sedge Warbler, Hobby (2 plates), Arctic and White-spotted Bluethroats, White's Thrush, Icterine Warbler, Reed Warbler, Marsh Warbler, Wood Warbler, Swallow, Martin, Sand Martin, White-bellied

Swift, Scops and Little Owls, Dartford Warbler, Goldcrest, Long-tailed Titmouse, Coal Titmouse, Wren, Tree Creeper, Nutcracker, Wood Lark, and Sparrow Hawk (3 plates). The standard of excellence is fully maintained, although, of course, some of the illustrations are more effective than others. We cannot help suspecting that the artist has not had a genuine specimen of the Marsh Warbler to colour from; for certainly the bird figured has all the rufous tint of the Reed Warbler.

45. *Macpherson on the Birds of Skye.*

[The Birds of Skye, with special reference to the Parish of Duirinish. Part I. 1886. By the Rev. H. A. Macpherson, M.A. Proc. R. Phys. Soc. Edinburgh, 1886, p. 118.]

This pleasantly written paper consists of field-notes on about 153 species, of which *Sylvia nisoria, Sitta cæsia,* and *Puffinus major* are new to the Hebrides, and the first is, indeed, new to Scotland. As this contribution is called Part I., we may expect to receive an account of the birds of other parts of Skye at some future time.

46. *Menzbier on the Migration Routes of Russian Birds.*

[Die Zugstrassen der Vögel im europäischen Russland. Von Dr. Michael v. Menzbier. Bull. Soc. Imp. Nat. Moscou, 1886, no. 2.]

Dr. Menzbier discusses the lately much-vexed question of the routes adopted by northern birds on migration at some length (80 pp.), and offers an improved scheme of arrangement of Palmén's six "Viæ," which, as regards the Palæarctic Region, he would prefer to place under two principal heads, (1) *Viæ marinæ litorales* and (2) *Viæ continentales et submarinæ litorales,* and several sub-heads. At the conclusion of his article Dr. Menzbier puts his results into ten separate conclusions, for an account of which we must refer our readers to the original. An interesting map of European Russia shows the "via norvegica," "via baltica," "via pontica," and "via caspica," which appear to be the four principal routes adopted.

47. *Menzbier on a new Green Woodpecker.*

[Notiz über einen neuen Grünspecht, *Gecinus flavirostris*, n. sp. Von Dr. M. Menzbier. Bull. Soc. Imp. Nat. Moscou, 1886, no. 2.]

The new species is allied to *G. viridis*, but is distinguished by its yellow bill and other particulars. Two specimens (♂ and ♀) were obtained by M. Zaroudnoï in Transcaspia, on the middle course of the Murghab.

48. '*Ornis*,' Vol. I. No. 4, Vol. II. Nos. 1–3.

[Ornis: Internationale Zeitschrift für die gesammte Ornithologie. Herausgegeben von Dr. R. Blasius und Dr. G. v. Hayek. I. Jahrg. 4 Heft., II. Jahrg. 1, 2, und 3 Heft. Wien.]

In the numbers of our contemporary which have reached us since our last notice ('Ibis' 1886, p. 519), the first contains the conclusion of Messrs. K. v. Dalla Torre and V. v. Tschusi's long report on ornithological observations in Austria and Hungary for 1883, the total number of species amounting to 314. Short papers from various correspondents are followed by some interesting notes on the ornithology of Friesland and the portion of Holland adjacent to the Zuider Zee, by M. Herman Albarda of Leeuwarden, comprising remarks on 202 species. A painfully suggestive feature is the total omission of the Spoonbill, a bird which only a very few years ago bred in colonies near Amsterdam, but for which the Editors of 'The Ibis' sought in vain last May, its old haunts having been drained.

To judge from the report of the permanent Committee in the opening Part for 1886, plenty of energy is shown in inviting cooperation, and responses have been received from almost all the regions of the earth. Prof. Lütken sends his second report (1885) on 157 species of Danish Birds, and our valued coadjutor Herr Gätke does the same for Heligoland; but the latter we have already noticed in its English version ('Ibis,' 1886, p. 516). A very important paper is the translation from the Swedish original (Stockholm Akad. Œfversigt, 1871) of Herr Meves's narrative of his expedition to North-western Russia in the summer of 1869, with notes by

Herr E. F. von Homeyer. It has been repeated by one ornithologist after another, not excepting the most omniscient, that the Snowy Owl, *Nyctea scandiaca*, has no ear-tufts; but Herr Meves asserts that it has, and that, although short, they are distinctly visible (p. 284). With regard to *Lanius excubitor* and the disputed specific validity of *L. major*, he maintains that he has found every gradation between them, as Professor Collett has substantially done. A list of Swedish birds by Dr. Sundström is followed by a translation into German, with notes, by Herr Meves, of the Introduction to Sundevall's 'Tentamen,' published in Swedish and French. Then comes a valuable paper on the birds observed in Iceland, by H. Benedict Gröndal, who, amongst other things, has settled the somewhat doubted occurrence of *Turdus pilaris* in Iceland; for he saw and examined one, alive but exhausted, taken on the 6th December, 1885. He makes a slip of the pen with regard to the Snow Bunting, *Plectrophanes nivalis*, by calling it *Montifringilla nivalis*; but it is almost needless to say that the true Snow Finch has never been found in Iceland. There is also a short paper by Herr P. Nielsen on the breeding of the Black-tailed Godwit and Water Rail in that country. A report on the birds of Livonia, comprising only 171 species, is succeeded by some valuable remarks upon 261 birds observed in the Dobrudcha and Bulgaria, by Count A. Alléon, already well known for his articles upon the avifauna of the vicinity of Constantinople.

49. *Oustalet on two new Species of Birds from the Cape Verd Islands.*

[Description d'espèces nouvelles d'Oiseaux provenant des Iles du Cap-Vert. Par M. E. Oustalet. Ann. d. Sci. Nat. xvi. (1883).]

The 'Talisman' brought home from one of the islands of this group, the Ilha branca (the home of the rare Lizard *Macroscincus coctæi*), an adult Shearwater which is described as new by the name of *Puffinus edwardsii*; also a Sparrow, distinguished from *Passer jagoensis* as *Passer brancoensis*, sp. n. These two new species appear to have escaped the eye of the

Recorder of "Aves" in the 'Zoological Record' for 1883, for which reason we think it well to mention them, even so long after date.

50–52. *Oustalet on new Birds from the Congo.*

[50. Description d'un Oiseau nouveau de l'Afrique Occidentale. Par M. E. Oustalet. Le Naturaliste, 1884.

51. Description d'espèces nouvelles d'Oiseaux provenant du Congo. *Id.* Ann. d. Sci. Nat. xvii. Art. 8 (1884).

52. Notice sur quelques Oiseaux nouveaux du Congo rapportés par les Naturalistes attachés à la Mission de M. le Comte de Brazza. *Id.* Le Naturaliste, 1886.]

No. 50. M. Petit brought home from Landana, Congo, the female of a Rail, for which M. Oustalet has constituted a new genus *Psammocrex,* the type of which is *Psammocrex petiti,* sp. n. This fact has also escaped the Recorder of "Aves" in the 'Zoological Record,' and is noticed for the reason stated above.

No. 51. This paper treats of two other new species obtained by the same collector—*Campophaga cærulea* from Landana, and *Ixonotus landanæ* from Cayambe.

No. 52. Among the results of Count de Brazza's mission are the following new species:—*Centropus savorgnani* from Franceville, *Coccystes brazzæ* and *Dendropicus pecilei* from Diele, *Saxicola tholloni* from Lékéti, *Cossypha pecilei* and *Phedina brazzæ* from Nganciou.

53–54. *Oustalet on new or rare Species in the Paris Museum.*

[53. Description de deux espèces nouvelles faisant partie de la collection ornithologique du Muséum d'Histoire Naturelle de Paris. Par M. E. Oustalet. Le Naturaliste, 1885.

54. Notices sur quelques espèces nouvelles ou peu connues de la collection ornithologique du Muséum. *Id.* Nouv. Archiv. d. Mus. sér. 2, viii. p. 255.]

In the former of these papers M. Oustalet describes as new a Hornbill, *Anthracoceros marchei,* found in the islands of Palawan, Busuanga, and Balabac; and a Humming-bird, *Chrysolampis gigliolii,* from Colombia. In the second paper he gives a full description, with a coloured plate, of the rare Argus Pheasant, *Rheinartius ocellatus,* followed by a list of thirty-two species from Annam, of which *Ægithina philipi,* from Hué, is considered to be new. Full particulars and coloured plates are also given of *Cyclopsittacus salvadorii* and *Ptilopus* (*Rhamphiculus*) *marchii,* originally described by M. Oustalet in 1880, and of *Numida marchii,* described by him in 1882.

55. *Pelzeln and Lorenz on the Types in the Vienna Museum.*

[Typen der ornithologischen Sammlung des k. k. naturhistorischen Hofmuseums. Von August von Pelzeln und Dr. Ludwig von Lorenz. Ann. d. k. k. Naturh. Hofmuseums, Bd. i. p. 249.]

This is the first portion of a very useful paper—an account of the *types* in the great and renowned ornithological collection of the Imperial Museum of Natural History at Vienna. Besides the types, those specimens are mentioned which are actually equivalents of types, as having been compared with types by, and received from, the describer of the species. These are called *authentic examples.* The arrangement followed is nearly that of Gray's 'Hand-list,' and the present instalment contains the Rapaces, Fissirostres, and Tenuirostres.

56. *Schperck on the Birds of the Amur.*

['Rossíya dailnayo vostoka.' By Franz Schperck. Being vol. xiv. of the *Zapiski* of the Imp. Russian Geogr. Soc. St. Petersburg, 1885.]

The author of this complete work on the Amur province has resided there for ten years. A list is given (pp. 358–362) of the birds observed, consisting of Rapaces 27, Scansores 14, Oscines 121, Gallinæ 13, Grallæ 43, Natatores 44. A number of new, or supposed new, species belonging to various genera are named *amurensis,* the exception being *Anas chinganensis,* but we can find no descriptions of them in this work.

57. *Shufeldt on Injuries to the Beak in Birds.*

[On Injuries of the Beak in Birds, and the Method of Repair. By R. W. Shufeldt. Journ. Comp. Med. and Surg., Oct. 1886.]

Dr. Shufeldt describes the curious mode of healing shown in the case of a Raven that had had the front portion of its upper mandible shot away, and was subsequently found to be well nourished and in good plumage. The "cut edges of the osseous bill met each other in the middle line and united completely by bony union."

58–59. *Sousa on African Birds.*

[58. Additamento à lista das aves collegidas em Africa de 1884 a 1885 pelos Srs. Capello e Ivens. Por José Augusto de Souza. Jorn. d. Sci. Math., Phys. e Natur. Lisboa, 1886, no. xliii. pp. 151–153.
59. Aves de Angola. *Id. Tom. cit.* pp. 154–170.]

The first paper contains eleven additions to the former list of species collected by the above explorers (see Ibis, 1886, p. 522), the only novelty for the Angolan avifauna being *Neophron pileatus*. The second paper treats of three collections made by Sr. José de Anchieta, containing 92 species, of which *Barbatula bocagei* and *Bradyornis benguellensis* are said to be new to science, while *Syrnium nuchale*, which Mr. R. B. Sharpe described from the Quanza, is a novelty for the Lisbon Museum. A species of *Drymoica* and one of *Hyphantornis* are, as yet, undetermined.

60. *S. Swinburne on Oceanic Birds.*

[Notes on Birds observed on various Voyages between England and the Cape of Good Hope. By Spearman Swinburne. (Communicated by J. J. Dalgleish.) Proc. R. Physical Soc. Edinb. ix. pp. 193–201.]

This interesting paper contains an account of the different birds observed on a series of voyages between Southampton and Cape Town, from July 1884 to September 1886. Of the 66 species enumerated, 16 are "land" birds and 6 are migratory waders, and we detect nothing very remarkable as regards the distribution of the latter within the latitudes and at the dates mentioned, all these occurrences being in the northern hemisphere. On future voyages Mr. Swinburne will probably be more fortunate in this respect. It is, however, with regard to the pelagic species, especially the Petrels, that his observations have the greater value, and, good as they are, they would be improved by the insertion of dates. For instance, the very point that we want to know with regard to the widely distributed Great Shearwater, *Puffinus major,* is the time of year during which it frequents the southern hemisphere; for we suspect it is there that its breeding-places will eventually be discovered, and we have great doubts with regard to its recorded breeding off the southern coast of Greenland. At present the evidence obtained all tends to show that this species merely frequents the waters of the North Atlantic from June to the end of October, after which date it is seldom found to the north of the tropic of Cancer; and these remarks apply to some extent to the Sooty Shearwater, *P. griseus.* If a specimen of the large Shearwater from the Azores could be obtained it might prove to be *P. borealis,* and not, as is generally supposed, *P. kuhli* of the Mediterranean. Further information respecting the distribution of the Skuas is much to be desired, especially as regards dates. Meanwhile we are very thankful to Mr. Swinburne for what he has done, in spite of the difficulties which necessarily attend upon voyages by mail-steamers, and we trust that our remarks may stimulate his zeal.

61. *Vian on the Young in Down of the* Ptilopædes.

[Monographie des Poussins des Oiseaux d'Europe qui naissent vêtus de duvet (*Ptilopædes,* Sundevall). Par J. Vian. Bull. Soc. Zool. de France, 1886, pp. 340–419.]

M. Vian's paper treats of the downy young of the European species of Gallinæ and Grallæ; the latter Order comprising the Bustards, Plovers, Scolopacidæ, Rails, Cranes, Herodiones, and Flamingo. As regards the Herons, &c., he somewhat naively remarks that "one would hesitate to admit them among the birds which are hatched covered with down, if it were not that they *incontestably* belong to an Order in which all the nestlings are clothed on emerging from the egg." This is one way of settling the question, with a vengeance!

62. *Vian on Asiatic Warblers in Heligoland.*

[Notice sur les espèces asiatiques du genre Pouillot (*Phyllopseuste*) capturées dans l'île d'Helgoland. Par J. Vian. *Tom. cit.* pp. 652–670.]

In this paper M. Vian discusses the eight rare species of *Phylloscopi* which have been captured in Heligoland; but however useful this review may be to those who do not read English, it will be of less service to our readers, who are already familiar with the writings of Mr. Seebohm and others upon the genus which M. Vian misnames.

63. *Vorderman on the Birds of Borneo.*

[Liste des Oiseaux de Borneo. Par A. G. Vorderman. Natuurk. Tijds. voor Nederl. Indië, Deel xlvi. Afl. 3.]

In this useful compilation the author commences with a list of the publications relating to the ornithology of this huge island, merely the outer shell of which has yet been pecked at by naturalists. The list itself contains the names of 472 species, of which *Porphyrio indicus, Hydrophasianus chirurgus, Dendrocygna vagans,* and *Podiceps tricolor* have been added to the Bornean catalogue by M. Vorderman.

64. *Zaroudnoï and Menzbier on the Birds of the Trans-Caspian Regions.*

[Oiseaux de la contrée Trans-Caspienne. Par M. Zaroudnoï, avec préface de M. Menzbier. Bull. Soc. Imp. Nat. Moscou, 1885, no. 2.]

This interesting paper gives an account of the avifauna of the long oasis, Ahal-Téké, which extends from Kizil-Arvad on the west to Gjaouarse on the east, and may be described as lying between the Kopepète-Dagh range and the desert of Kara-Koum. M. Zaroudnoï's explorations lasted from June to September 1884, during which time he collected 600 specimens, assigned by Dr. Menzbier, with a few reservations, to 184 species. In May 1885 M. Zaroudnoï started on his second voyage, this time for Horosan and Northern Afghanistan; and it is not improbable that when the results of this expedition are known, they may prove similar to those obtained by Dr. Aitchison, the naturalist of the Afghan Delimitation Commission.

XXV.—*Letters, Extracts, Notices, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Northrepps, 11th December, 1886.

Sirs,—The following extracts from a letter just received from my friend Mr. Samuel Bligh, of Catton, near Koslande, Ceylon, will, I think, be of interest to ornithologists:—

"An Eagle a friend shot about six miles from this place and sent to me is a very interesting specimen, being the first dark-plumaged bird of *Limnaëtus ceylonensis* that I have seen, which is very strange, considering the number I have had in the flesh and the many that I have watched with my telescope.

"On skinning this specimen I noticed that the bones and muscles were very mature and firm, the bones had even a yellowish or old ivory look; the eye was bright orange-yellow; the bill black, with plumbeous and olivaceous tinges at the gape; the cere blackish brown, tinged with olive; the toes dull ochreous yellow, with a tinge of olive. On the whole, I think the bird comes under Col. Legge's description of a bird three or four years old.

"In the stomach were the remains of a chicken, freshly swallowed, and of another bird too much digested to identify. The Eagle was in capital condition.

"A very fine adult female of *Huhua nipalensis*, shot about ten miles from hence, was lately sent me; its eyes were brown, bill uniform horny yellow, with the slightest tinge of green; in the stomach were the remains of frogs and crickets."

Yours &c.,
J. H. Gurney.

22nd February, 1887.

Sirs,—I am obliged by your suggestion of a reference to Baird, Brewer, and Ridgway, with respect to my note on the breeding-plumage of *Podiceps occidentalis*. The reference had not escaped me, but as it added nothing to our previous knowledge of the subject, I did not allude to it. The description as given on page 422 of the 'Water-birds of North America' is:—

"Adult, full breeding-plumage. Pileum and nape slaty black, &c.

"Adult (and young) in winter. Similar, but pileum and nape brownish slate, like the back."

This is the only distinction given. It is therefore perfectly evident that the writer had not seen a breeding bird, but possibly an adult just about to assume the nuptial dress. There is no mention of the glossy green-black crest, the silvery-white throat and ear-coverts, with the rich chestnut border, by which, as Prof. Baird anticipated, it makes "a grand display," and not a mere deepening of the winter grey colour of the head. It would have been strange, indeed, were the largest and finest of the Grebe-kind content with merely darkening its head-dress at the nuptial season.

Yours &c.,

H. B. TRISTRAM.

Birds of the Afghan Boundary.—In his memoir on the "Fauna and Flora of the Afghan Boundary," read before the Linnean Society on February 3rd last, Dr. Aitchison gives the following account of his ornithological work:—"As regards birds, 123 species, belonging to some 84 genera, were collected, while 14 other species were identified, though not preserved. Two new species only were procured, viz. a Pheasant, *Phasianus principalis,* and a Woodpecker, *Gecinus gorii.* The birds in Afghanistan are chiefly migratory, with the exception of the above new Pheasant, Raven, Rook, Carrion Crow, Jackdaw, Sparrow, Starling, Sky Lark, Crested Lark, Bokhara Lark (*Melanocorypha bimaculata*), Wall Creeper (*Tichodroma muraria*), Bittern (*Botaurus stellaris*), several Raptores, Sand Grouse (*Pterocles arenarius*), and Red-legged Partridge (*Caccabis chukar*). As spring advances, birds are seen to arrive, following each other rapidly, such as *Aedon fami-*

liaris and various species of *Sylvia, Saxicola, Lanius, Motacilla, Pastor, Merops,* and *Coracias.* Various Ducks then leave the country, but the Brahminy Duck or Ruddy Sheldrake, *Casarca rutila,* remains throughout the year and breeds there. The greater number of the species met with belong to the genera *Saxicola* (8), *Lanius* (6), *Sylvia* (5), *Motacilla* (5), and *Emberiza* (4)."

Dr. Radde's Trans-Caspian Expedition.—Dr. Radde writes to us from Tiflis that he brought back with him from his Trans-Caspian Expedition 12 specimens of *Ovis arkal,* 850 bird-skins, and a large series of reptiles, besides other spoils. The collections are now being worked out by various experts, and the results will, it is estimated, require a work of four volumes to contain them. He has obtained examples of most of Mr. Blanford's Persian species.

OBITUARY. *Mr. Robert Gray, F.R.S.E.*—It is with much regret that we record the death of Mr. Robert Gray, of Edinburgh, on the 18th of February. To southern ornithologists he is best known by his most important work, 'The Birds of the West of Scotland,' published in 1871, and which continues to be the standard authority for that portion of the country ; but he also wrote 'The Birds of Ayrshire and Wigtownshire,' and contributed many papers to the 'Proceedings' of the Royal Society of Edinburgh (of which he was a Vice-president), the Royal Physical Society (of which he was Secretary), the Glasgow Natural History Society, and other periodicals. The genial presence of this veteran naturalist will be much missed at the scientific and other gatherings which he frequented in Edinburgh and Glasgow.

THE IBIS.

FIFTH SERIES.

No. XIX. JULY 1887.

XXVI.—*Notes on Mediterranean Ornithology.*

By Lord Lilford.

(Plate VIII.)

We joined the yacht 'Glowworm' at Cadiz on February 8th, 1882, and after some ten days spent in our favourite haunts on the Guadalquivir, in pursuit of Bustards and Wildfowl of all sorts, proceeded to Gibraltar and Malaga. Our party consisted of Lieut.-Col. Irby, my eldest son, Mr. E. G. Peck, and myself. Before making eastward from Cadiz I was caught by my enemy and incapacitated even from boating for a long time; but during our stay at Malaga, which extended from March 1st to 16th, my companions were constantly out on the bay, and met with a good many birds—Gulls, a few Terns, some Skuas, great numbers of both the Mediterranean species of Shearwater, Scoters, one Diver, a Grebe or two, Razorbills, an occasional passing Heron, and an Osprey. The Gulls in the harbour of Malaga seemed to be exclusively *Larus fuscus* and *Larus ridibundus*. I find no note of having on this occasion met with *Larus cachinnans*, and, in spite of eager and constant look-out, we failed to identify a single specimen of *Larus melanocephalus*—a species, indeed, which I have never had the good fortune to meet with on any part of the coasts of Spain. The efficient members of our party obtained a good series of Shearwaters, *Puffinus kuhli*, and a smaller species which appears to be now generally accepted as *Puffinus anglorum*, but is, in my opinion, a very distinct bird, intermediate in size between the two above named. Colonel Irby had the luck to wing a Skua with a bullet, the only bird of this family obtained out of some few seen, and brought it on board alive; it proved to be an immature specimen of Richardson's Skua (*Stercorarius crepidatus*), in the almost uniform deep brown stage of plumage. No Grebe was obtained by our party and but few seen: those few, from the description given to me, were, I think, without doubt, Eared Grebes (*Podiceps nigricollis*). Colonel Irby made an expedition by railway in company with Rafael Mena, a keen professional ornithologist (with whom I had had much correspondence and many dealings), into the Sierra in search of a nest of Bearded Vulture; but although they saw one of these grand birds, they could not discover this year's breeding-site, and returned with no prey but a Red-billed Chough (*Pyrrhocorax graculus*), of which species they saw a great number. I may here mention that I have at various times received from Mena four young Bearded Vultures alive, two of which, taken from the Sierras near Malaga in 1878, are now living and flourishing at Lilford; one of these birds has acquired a certain amount of the tawny-red colouring on throat and breast, which is so characteristic a distinction of adult birds of this species in a wild state. Mena assured me most positively that although the young Bearded Vulture is generally hatched in February, it remains in the nest till late in June, though fully feathered and capable of flight long before that time. He is well acquainted with the Sierras of the neighbourhood and their human and feathered inhabitants, and in most years could command the produce of two or three eyries of the Bearded Vulture. It is remarkable that although almost every bird killed in the neighbourhood of Malaga, and intended for preservation, passes through Mena's hands, he had not, before this visit of ours, ever handled a specimen of the larger Shearwater, though our gunners assured me that it was by far the most common of the two species above mentioned. The only species of Tern obtained was the Sandwich Tern (*Sterna cantiaca*), which was met with in considerable numbers.

We left Malaga on the morning of March 16th, in a heavy easterly swell with a light breeze from that quarter, and making but little way, brought up under the lee of a point of low land near Adra, in hopes of a quiet night, which, however, we failed to obtain. A Hoopoe boarded us early on the 17th, and we observed a flight of Cranes (*Grus cinerea*) making the Spanish land from the southward. We got our anchor about 6 A.M., and with light easterly breezes and very fine weather steamed into the harbour of Valencia on the afternoon of March 18th. I was still unable to do more than get up on deck and bask in the sun, and Colonel Irby was obliged to leave us for England, *viâ* Barcelona and Perpignan, but my Valencian friends made our visit very pleasant; and I made the acquaintance of Don J. Arévalo, Professor of Zoology in the University, a hard-working ornithologist and student of 'The Ibis,' with whom I had much pleasant bird-talk. This gentleman gave me a good deal of interesting information, especially concerning the habits of *Lusciniola melanopogon*, which is not uncommon in the marshes of the Valencian Albufera; he also assured me of the truth of a report which had reached me of the occurrence on that lagoon of *Pelecanus onocrotalus*. But this may have been one of two individuals of this species which escaped from the Royal Aviaries at Madrid many years ago, and which appear to have worked their way, with frequent rests, to the eastern coasts, as during my rides in Spain, in the spring of 1864, I heard, at various inns and ventas at which I halted, marvellous tales of two white birds, "larger than Vultures," and with "heads like horses," which had caused great excitement and consternation in the minds of the country folk of La Mancha, and along the southern side of the Sierra Morena. My son accepted an invitation to assist at the last "tirada" of the season at the Wildfowl on the Albufera on the 24th, and, in spite of an accident to his gun, brought back thirty-four "fowl" as his share of the day's bag, consisting of *Anas clypeata, A. acuta, A. querquedula, A. crecca, Mareca penelope, Fuligula ferina,* and a fine adult specimen of the Common Heron (*Ardea cinerea*) alive, slightly wounded in the pinion-joint, which we added to our floating menagerie.

We left Valencia on the morning of March 25th, and steamed into Port Mahon, against a very heavy head sea, the next day about noon; there we were detained by a very heavy north-easterly gale which blew without cessation till the evening of 30th. The only birds noticed about the harbour were Kites (*Milvus ictinus*), an Osprey, one Buzzard (*Buteo vulgaris*), many Gulls, all of which were the Mediterranean Herring Gull (*Larus cachinnans*), and some Shags (*Phalacrocorax graculus*). We steamed out of the harbour on the evening of the 30th, with no wind, but a long rolling sea, passed through flocks of certainly some thousands of both species of Shearwater, at the entrance of the harbour, and noticed, some miles off the land, a solitary Puffin (*Fratercula arctica*), to the best of my recollection the first of this species ever seen by us in the Mediterranean. Our destination was Spezia, and at noon of the 31st we made the high land of Asinara, at the N.W. extremity of Sardinia; the sea had entirely gone down, and the weather was bright and balmy. Several Redbreasts, apparently tired out, boarded us during the day, and on this day we met with the first Black-headed Gull (*Larus melanocephalus*) seen by us during this cruise. I am by no means inclined to enter into the never-ending question of scientific ornithological nomenclature, but I must make a protest against the obvious but almost universal misapplication of the English words "Black-headed" to *Larus ridibundus,* a species which at no period of its existence has any *black* about the head, and for which I venture to suggest "Laughing Gull" as a much more appropriate designation. "Adriatic" is, though not quite so inappropriate, a vague and unsatisfactory term as applied to *L. melanocephalus,* which is a common species in all but the extreme western portion of the Mediterranean with which I have any acquaintance. To resume our story, we ran through the Straits of Bonifacio with a bright moon and perfectly calm sea, and at 1 A.M. on April 1st left off steaming, to give our stokers and engineer a spell of sleep, off the entrance to the bay of Porto Vecchio in Corsica. We got up steam again about 8.30 A.M., and had a delightful run along the very beautiful eastern coast of Corsica, our only incident being the purchase of two fine Dentici (*Sparus dentex*) from some Leghorn fishermen, whose becalmed vessel we overhauled and towed for several hours till off Bastia, and the weather holding calm, we anchored off the town of Spezia early on the morning of April 2nd. We remained at this most beautiful but ornithologically unproductive spot for some days, making a few excursions by land and water. The only Gulls seen by us in the harbour during this visit were *Larus melanocephalus* in small numbers; many of them had already acquired the full black head. We observed our first Swallow and House-Martin of the year on April 4th, but, with the exception of the Gulls above mentioned and two or three Cirl Buntings, not nearly so much as might be seen in almost any part of our own country by an observer of bird-life. We left our harbour under sail with a light head wind on April 13th, and beat into Leghorn the next morning against a very strong S.E. breeze; hence we made a visit to the Museum at Pisa, which I had missed seeing on a former occasion; some of the groups of stuffed birds are most admirably mounted, but as Mr. H. Saunders has given some account of this Museum in a former volume of 'The Ibis,' I refrain from further remarks thereon. The weather during our stay at Leghorn was extremely unpleasant, a strong wind blowing from all quarters of the compass, with cold driving showers. This state of things, and the fact that two of our party were invalids, detained us in this commodious but unattractive port till the morning of April 19th, when, with a smart breeze from N.N.E. and fine weather, we got away about 9 A.M. under steam and sail, and ran into Porto Longone in Elba; but as it looked unproductive did not remain there, but ran round the south-eastern point of the island, and anchored in a fine bay with a few scattered cottages and small chapel near the beach at its head. The name of this place is given as Acona on our Admiralty charts, but is entirely ignored by the natives, who, so far as we could make out, are quite content that their habitation should remain unnamed and unknown to the outside world. This south coast of Elba is very bold and high, with finely and variously coloured cliffs, steep to the water's edge in many places, and deep bays with good anchorage and shelter from all but southerly winds. The hills are scantily cultivated, and, according to the very few inhabitants with whom we had any chance of parley, produce little but iron in abundance, a thin wine, and a few Partridges (*Caccabis rufa*). Our own explorations were almost exclusively confined to boat-cruises along the foot of the cliffs. Birds were remarkably scarce; a comparatively small number of Rock Doves frequent the coast, which is most admirably adapted to their habits; the ubiquitous Mediterranean Blue Rock Thrush (*Monticola cyanus*) here and there greeted us with his characteristic notes and actions of surprise and curiosity; a *Neophron*, two or three Falcons, probably *Falco punicus* (of which much more anon), Kestrels, Crag Martins (*Cotyle rupestris*), a pair of Ravens, a very few Herring Gulls, and two Shags were about all the birds observed by us during our first day's examination of these shores. The absence of Gulls and other sea-haunting and rock-breeding species was most remarkable, and only to be accounted for presumably by an equally remarkable absence of fishes—a fact of which the natives assured us, and of which we were convinced, not only by the absence of fish-eating birds, but by the entire absence of Seals, for which animals these cavernous rocks seemed in other respects most admirably suited. We discovered the nest of the above-mentioned Ravens, but the rock in which it was built was so friable that I did not like to risk the life or limbs of any of the volunteer cragsmen of my crew by attempting a formal siege. On shooting a Rock Dove in one of the crannies of the cliffs to the westward of our anchorage, I noticed that three or four of the Crag

Martins, which were numerous and quite fearless of man, seized and carried off several small feathers of the dead bird, which were whirling in an eddy of air. On April 21st we saw our first Common Tern (*Sterna fluviatilis*) of the year, and discovered an eyrie of a Falcon high up in a rugged pinnacle of apparently ironstone crag to the eastward of the bay of Stella. The female bird only appeared once on our shouting and rattling our oars, and we marked her into her breeding-hole, but the Tiercel dashed about the summit of the cliffs, screaming loudly. I was sorely tempted to attack this nest, especially as I was becoming more and more convinced every day that these Mediterranean *breeding* Falcons belong to a race very distinct from what, for want of a better name, I must call the typical form of *Falco peregrinus*. To any one accustomed, as we are, to see our favourite birds on wing, the size is quite sufficient to satisfy us that here we have to do with a very different bird from the type just named. However, in this instance, the evening was creeping on, and it would have been impossible to land anywhere within at least a mile of the nest, so that the necessity of carrying a heavy coil of rope through matted scrub to a height of some four or five hundred feet, and the fact that we were running short of provisions, combined to compel us to abandon the idea of attempting a siege, so we ran round to Porto Longone and laid in meat, bread, vegetables, and various fishes, of which the best for the table was a Pelamid (*Scomber pelamitus*) of some three pounds weight. Porto Longone is an excellent harbour, well sheltered and with good and ample anchorage; but it seems that yachts seldom enter it, as our appearance created great excitement amongst the natives of the little town, whose inhabitants seemed to be chiefly miners and fishermen.

We steamed out soon after daylight on April 22nd, a beautiful calm sunny day, and steered for Monte Christo, a most picturesque, somewhat pyramidal mass of variously coloured rocks, of perhaps some four or five miles in circumference. The eastern face of the island is a sloping mass of grey slabs of rock with scanty patches of scrubby vegetation, seamed with two or three water-courses; the northern side is more steep, but cleft by a small cove, with a landing-place and a pathway to a large building at some little distance up the glen, which is cultivated and planted with vines, fig, and other trees. We lowered away our cutter, and rowed round the western side of the island, which is more or less precipitous. A small colony of Herring Gulls were apparently breeding on the flat top of a little rocky promontory, and circled over our heads with great clamour, two or three Shags dived before us, and two pairs of the small Peregrines showed by their angry screams that their eyries were in the crags above us; a Blue Rock Thrush whistled from a crevice, and these few birds constituted, as far as we were concerned, the entire visible avifauna of the island. We went on board the yacht again off the south-western point, and stood away for the southern end of the island of Giglio, a high narrow mass of rock, apparently terraced with vines in every available spot, and dotted on the western side with white cabins. The southern side slopes gently, and terminates in a low range of cliff, at the western extremity of which stands a lighthouse. On rounding this point we lowered our cutter and explored a mile or more of the fretted and waterworn rocks. In a barren creek just below the lighthouse we found and shot a Green Sandpiper (*Totanus ochropus*), a mud-larker which seemed entirely out of its element upon the rocks, where a Purple Sandpiper would have been completely at home. In a pinnacle of jagged rock to the eastward of the lighthouse was a nest of the small Peregrine; both the parent birds dashed about over us, screaming angrily, and the male flew off and circled round the yacht for several minutes. This eyrie would have been accessible to a good cragsman from above, but the shades of evening were falling, so we pulled on to the eastward, and shot a few Rock Doves from some small caves. The only other birds seen upon Giglio were a pair of Kestrels, the ubiquitous Blue Rock Thrush, a pair of Alpine Swifts (*Cypselus melba*), and a solitary Common Sandpiper (*Totanus hypoleucus*). We went aboard of the yacht about nightfall, ran over to the mainland, and anchored for the night off Porto Ercole on the south side of Mount Argentaro. We remained at anchor during the next day; our steward, on going ashore at the little town in the morning for provisions, was accosted by a lady who spoke fluent English, and assisted him greatly in his market operations. The only description that I could obtain from him of this most obliging signora was that she was "a real lady," with rings on her fingers, a crinoline, and silk stockings. Two of our party who went ashore for a walk in the afternoon described a pretty English-looking country, with a good road, fences of whitethorn, bramble, &c., and a profusion of wild flowers. This is a good anchorage in northerly winds, and we were assured that the southerly winds never came "right home," though our vessel rolled unpleasantly in a south-easterly swell through the night. A good specimen of the Subalpine Warbler (*Sylvia subalpina*, ♂) was picked up dead on our deck at daybreak of April 24th. At about 7.30 A.M. we got our anchor, and steamed away for Gianutri, about eleven miles from Porto Ercole, where we found a perfectly snug land-locked harbour in the little gulf of Palmatoja, on the eastern side of the island, which consists of low undulating country, thickly overgrown with scrub, and abounding in rabbits. We found a party of Neapolitan fishermen established in a creek of our little gulf, and purchased from them various fishes. Amongst these were a fine specimen of the Greater Forkbeard (*Phycis blennoides*), also some small fry, amongst which, with our infinitesimal acquaintance with ichthyology, we identified *Pagellus erythrinus*, *Muræna helena*, a very curious fish of the genus *Cottus*, and great abundance of small brilliantly coloured Wrasses, Blennies, and others. We found it very difficult to understand these Neapolitans, who seemed to have a great deal to tell; but as the swell outside was too heavy to allow of a boating expedition round the island, we obtained most of our zoological information from one of the lighthouse keepers, who told us that as the greater part of the island was rented by some gentlemen of Leghorn for shooting, he was reluctantly obliged to prevent our sporting ashore. He also declared most positively and repeatedly that the island was visited in the winter months by both Red-legged and Grey Partridges, neither of which species remained to breed thereon, that the scrub was infested by Wild Cats, that there was no spring of water, that he and his family were entirely dependent upon the clouds for their supply, and that the lessees of the shooting had turned down some Pheasants.

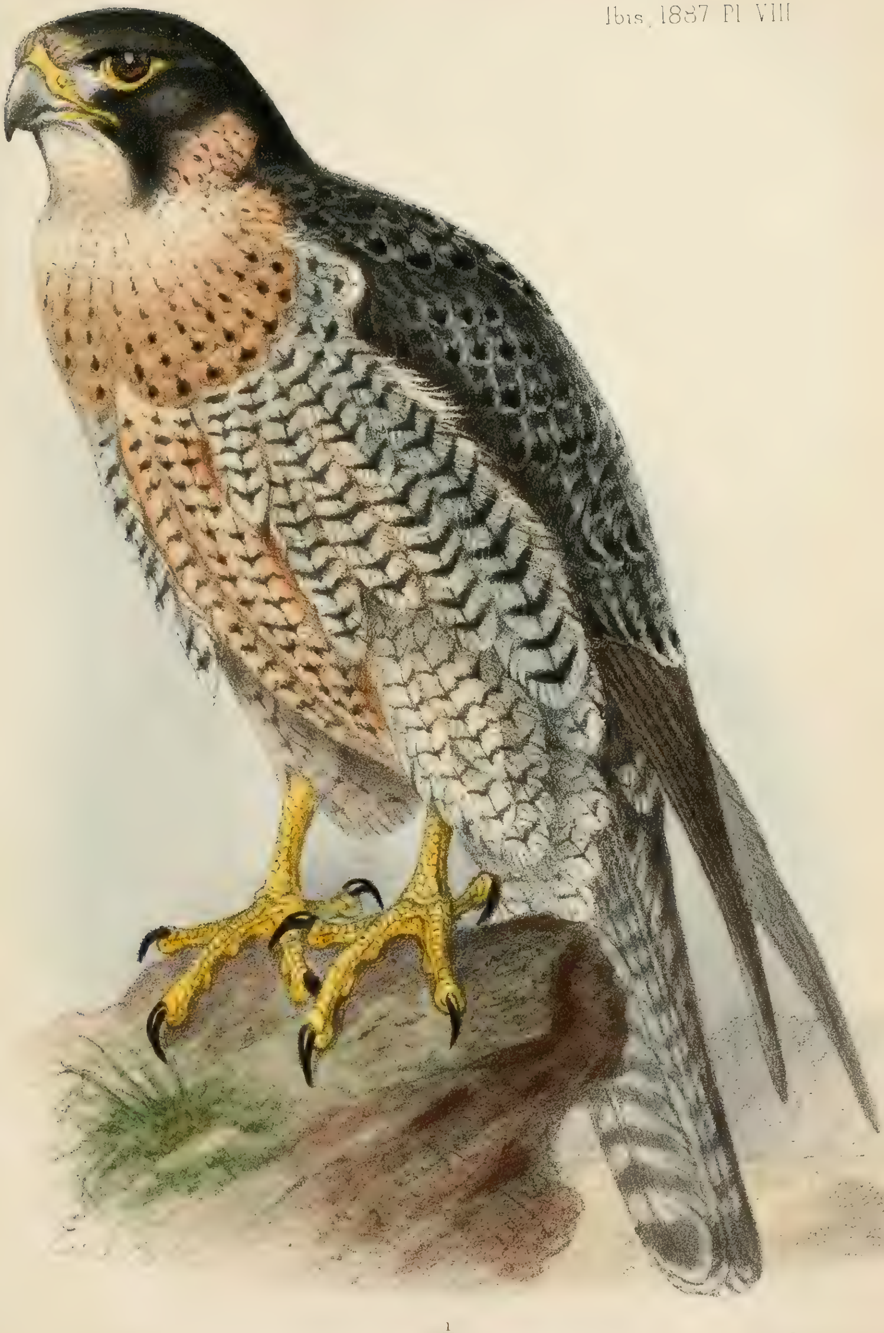
The only birds seen by our party on Gianutri, and not previously mentioned in this paper, were the Hoopoe, Common Redstart, Black-headed Warbler, Cuckoo, and Turtle Dove; the men of our crew found a few nests and eggs of *Larus cachinnans*; my son shot a very fine female of the small Peregrine, of which birds we observed a pair haunting the lower cliffs of the northern side of the island, where no doubt they had a nest. The lighthouse-keeper talked of some fine sea-caves on the western side of the island, but declared that no Rock Doves frequented them, and as the heavy swell which rolled in from the southward would have entirely prevented any exploration in a boat, we did not attempt to verify these reports, and on the evening of April 25th ran off and anchored off the little port of Giglio, on the eastern side of the island of that name. This port is only accessible for very light craft, and we rolled horribly all through the night, and at daybreak ran across to Porto San Stefano, an excellent anchorage on the northern side of Mount Argentaro, with a town well supplied with all necessaries. It rained in torrents all the morning, but cleared in the afternoon, and we went off in our steam-launch to see if we could find any passage into Lake Orbitello, a large sheet of water lying between the town of that name and the promontory of Argentaro. A passage exists, but we found it barred with mullet-traps, so after coasting for a short distance along the sandy flat which separates the lake from the sea, we went about and ran as far as the heavy sea would permit past our anchorage and under the cliffs of Mount Argentaro. We saw no birds with the exception of a Falcon, a few Sandwich Terns, and many Shearwaters of the two species. We remained at our anchorage the following day, as the weather was very stormy, with a heavy sea running from the south-west. My son shot three of the larger Shearwaters from our deck. The weather moderated during the night, and about 11 A.M. on the morning of April 28th we started under steam and steered for the Straits of Bonifacio. A slight N.W. breeze induced us to make sail on rounding the northern end of Giglio, but this soon failed us, and about 4 P.M. we ran into the heaviest dead swell that we had ever encountered in the Mediterranean; this rolled in from the south-west, with a slight cross-sea from the north, and being unable to make any way against this combination, we bore up under the lee of Monte Christo; but soon after midnight a gale came down upon us from the N.W., and the island affording us no shelter, we ran back through a fierce cross-sea to Port Ercole and anchored. Making another start about 8 A.M. on the morning of April 30th under sail, with a slight southerly breeze, we saw a large flight of Cranes going eastward. A tired Swallow came aboard of us during the day, and several more of these birds and a Quail visited us during the night. The breeze failed us at about 8 A.M. of May 1st, at some ten miles from the entrance to the straits, so we got up steam again, and passing the islands of Razzoli, Santa Maria, Budella, and Spargi, anchored in the roads of Maddalena close to the town of that name, about midday. A strong easterly wind sprang up as soon as we were amongst these islets, and a Harrier, which we took to be *Circus cineraceus*, was all but blown foul of our funnel. The town of Maddalena is inhabited by a colony of Genoese and Corsican descent, who decline to be considered Sardinians, and call themselves "islanders," as they undoubtedly are. We rowed off to the landing-place, and were immediately surrounded by a civil but inquisitive crowd, who were much amused by our leaving the matter of supply to our steward, and cross-questioning every likely-looking lad as to their acquaintance with a Gull with coral beak and black legs. We could extract nothing positive on this subject or any other of zoological interest, the fixed idea in the minds of these islanders being that we had come to visit General

Garibaldi, who lay dying at his house on Caprera, which was in sight from our anchorage. The strong easterly wind which swept in strong gusts about the intricate channels amongst the islands made things unpleasant and prevented our doing any boating exploration during the afternoon. A few Herring Gulls, a Kestrel, two Common Terns, and some Shags were the only birds seen. We kept a loaded gun ready on deck in case of a visit from Audouin's Gull, of which we had impressed a description upon the minds of all our officers.

Early on the morning of May 2nd, having discovered an old shipwright who said that he knew everything, we engaged him to pilot us about the rocky channels and creeks of the straits in search of birds and nests, and started with him in our steam-launch to explore some little rocky islets in the channel that separates the island of Maddalena from Caprera. We found two or three nests of the Herring Gull on sandy spots among the rugged granite boulders of which these little islands are formed, each nest containing three hard-set eggs. Our old guide scrambled to one or two empty nests of the Rock Dove on the western shore of Caprera: a pair of Ospreys were constantly in sight, a Bonelli's Eagle hung in the breeze over the centre ridge of Caprera, Shags in all stages of plumage were fishing in every direction and drying their plumage with outspread wings on the numerous blocks and ridges of rock that crop up in many places a few feet above the water; and a pair or two of Common Terns hovered over the few sandy beaches of this rocky wilderness. The old native told us that many Shearwaters bred upon a small island off the southern end of Caprera, between it and the mainland of Sardinia, but did not hold out much hope of finding eggs, as the said island, "Porco" by name, is a favourite resort of the Neapolitan fishermen who frequent these waters, and is also, as our informant averred, infested by rats of such huge dimensions and ferocity as to make it dangerous to sleep ashore! This story naturally excited our curiosity, and we coasted along the shores of Caprera for two miles, startling some Barbary Partridges, *Caccabis* *petrosa,* on our passage, and seeing a few Black-headed Warblers amongst the evergreen scrub which clothes the greater part of this wild abode of the old Italian hero. I may here mention that our old pilot, whose name has escaped me, but whom we named, I know not why, "the Trojan," told us that Garibaldi, who was in his younger days a keen sportsman, had turned out on Caprera goats, Pheasants, and several species of Partridges not indigenous to the islands, but could give us no information as to any results with regard to the birds, though he said that the goats had multiplied exceedingly, and were very wild and difficult of approach. He added that the General and his sons did all in their power to preserve the game for themselves and keep the island free from poachers, though they would readily give any English visitors free leave to shoot and explore. But I did not like to intrude in any way upon what proved to be the last weeks of the existence of the old soldier, and we did not set foot upon his domain. Porco proved to be a mass of jumbled boulders, attaining to a height of perhaps 70 or 80 feet at the highest point, with a little sheltered creek on the western side, of just sufficient size and depth to admit our launch. We searched every likely accessible hole and cranny, but found nothing except bones, feathers, and fragments of the egg-shells of the Shearwaters; nor did we obtain a sight of one of the terrible rats above mentioned, though numerous foot-marks on the small sandy patches bore evidence to their presence, and to some extent also to their unusual size, though it is difficult to imagine how they support themselves when the Shearwaters are away from home. I imagine that the four-footed vermin must cross the sea either to Caprera or the mainland, and only visit Porco during the nesting-season, though the Trojan swore by all his gods that no such rats were to be found in any spot in the straits but this. I may add that he distinguished these beasts by the name of "Pontici," and I much regret that we were unable to obtain a specimen. We returned to our anchorage by the channel between the mainland and the island of San Stefano, a high barren ridge of rock that lies between Sardinia and Maddalena. On arriving on board the yacht, we found that the mate had killed a beautiful Audouin's Gull from the deck with a rifle-ball, at a distance, as he declared, of 300 yards. Be that as it may, the bird was quite undamaged as a specimen, in perfect adult plumage, but considerably smaller than any of this species that I had previously met with, and differed from them also in the colour of legs and feet, which in this bird were of a dusky olive-green, those of the former being almost black, with a trace of lead-colour. The Trojan recognized the bird at once as "Cirulia" (the common Sardinian name of *Totanus hypoleucus*), and said that, although a few of them frequented the neighbourhood of Maddalena during the summer, he could not be certain about ever having found their nests.

On the following morning, about 8 A.M., I was summoned on deck by the news that a "red-billed Gull" was hovering around our ship; and sure enough there was another "Audouin," with some dozen Herring Gulls, picking up the refuse of the crew's breakfast close to our stern. I sent for a gun, but though I had a very easy shot, somehow managed to miss my bird altogether. The morning was rough and wet, and as something had gone wrong with the propeller of our launch, we remained on board till about 2.30 P.M., and then went off in the cutter to examine the western side of Maddalena. This consists for the most part of cliffs of considerable height, with masses of huge rocks in the wildest confusion at their base; in one of these cliffs we discovered a little cavity, at perhaps a hundred feet above the sea, from which proceeded a loud and continuous screaming of young Hawks. On our firing a shot or two at the few Rock Doves that dashed out of the detritus at the foot of the cliff, a male Falcon flew out from a ledge above the cavity just mentioned, but we did not see the female bird. After surveying the spot as far as was possible from our boat, with a view to attempting an attack on the nest on a future occasion, we coasted the western side of Maddalena in a northerly direction for some distance. We shot another beautiful specimen of Audouin's Gull, but made no fresh discoveries, except that of a Raven's nest, from which the young birds had apparently flown very recently. The Blue Rock Thrush is *the* characteristic species of these barren rocky islands, and during our boat-cruises in the straits, between the 2nd and 15th of May, we seldom passed an hour without having one or two Ospreys in sight, though we could not succeed in discovering their nesting-place. My son shot a third specimen of Audouin's Gull over the stern of the yacht shortly after our return on board about sunset. Some Neapolitan fishermen brought us an enormous skate, a shark (which I made out by the aid of 'Couch' to be *Squalus squatina*), and some very fine lobsters. On the morning of May 4th we went off early to the Falcon's cliff; three or four of our crew landed and managed to climb to a broad ledge apparently some 30 feet above the nest, and thence lowered a rope by which the old Trojan, after a rough scramble over the huge rocks at the cliff's foot, was easily hauled up to the hole. This from the sea had very much the appearance of having been made by a cannon-ball or shell, but was large enough to admit the head and shoulders of our cragsman, who came rapidly down the rope with two young Falcons, male and female, fairly feathered, but with a good deal of down still on them—in fact, in a state that a falconer would call just "fit to take." These young birds were, without question, of the race which Mr. J. H. Gurney has, in 'The Ibis' for 1882, p. 310, identified as the *Falco punicus* of Le Vaillant—a very distinct bird from the *F. barbarus* of O. Salvin, 'Ibis,' 1859, and the true *F. minor*, Bp. (*peregrinoides*, Smith), as quoted by Mr. Dresser in his 'Birds of Europe;' but in my opinion identical with *F. brookii* of Mr. R. B. Sharpe, and without doubt the Barbary Falcon of most, if not all, of our old English authors on falconry. My reasons for coming to this conclusion are the extreme rarity on the Mediterranean shores of the Falcon to which the designation of "Barbary" is now given, the comparative abundance of *F. punicus* in Morocco and the islands of the western basin of that sea, and the fact that most of the old authors who give any description of the "Barbary Falcon" pretty accurately point out the differences which distinguish *F. punicus* from the Peregrinoid form with which they were best acquainted—that is, from what, for want of a better definition, I must call the *typical F. peregrinus* of Europe. Mr. Gurney, *loc. supra cit.*, has gone into such elaborate details on the measurements and plumages of the three races or subspecies, *F. barbarus, F. punicus*, and *F. minor*, that any remarks of mine on these points would be superfluous; and I feel that the best that I can do is to present to the readers of 'The Ibis' the accompanying figure (Plate VIII.) of the female bird from the nest on Maddalena above described. The original drawing was taken from life by Mr. E. Neale in the late autumn of 1884, and the Falcon, still alive (March 1887), has not materially altered in plumage from the state in which she is therein depicted. I may here mention that I believe that this form of Peregrine is the bird described by Alonzo Martinez de Espinar ('Arte de Ballesteria,' etc., Madrid, 1871) at p. 335 of his work, under the name of "Alcon montano," and possibly also under those of "Alcon Bahari" and "A. Borni." Of the first he writes:—"The Mountain Falcons were so called because they breed in the mountains: their colour is grey, variegated, dark spots: they are nearly of the size of the Neblies (*F. peregrinus*), shorter in body and feather, but very powerful; their temperament is savage and passionate; they are so full of spirit, that they attack any bird, however strong or large it may be; they should not be flown at what they cannot kill, for they become disgusted, and are lost; and if by chance they return to the falconer, they attack him or the Falcon that assists them, for they are of a very evil disposition." The author just quoted gives, at p. 336, a concise, but very clear and intelligible, description of the Lanner, *Falco feldeggi*, under the name of "Alcon Alfaneque," and of the Barbary Falcon, *F. barbarus* of O. Salvin, *loc. supra cit.* (Linn.?, nec Briss.), under that of "Alcon Tagarote." Of the former of these two Falcons he writes that "they breed in Barbary, and many are sold in Oran;" and of the latter, that "they also breed in Africa; are of the colour of Peregrines, though the white of their plumage is somewhat *encendido* (warmed up), like the colour of *brasil*

Ibis, 1887. Pl. VIII



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Hanhart imp

FALCO PUNICUS, ♀

(rouge);" he goes on to relate that, though small of body, they are of such courage that one has been known to seize a Swan, and not quit her hold till the said Swan dived under water. I will only add that I look upon this little Falcon as closely allied to, or a subspecies of, *Falco babylonicus,* whilst *F. punicus* stands in exactly the same relationship to *F. peregrinus.* The subject of the figure was by far the most savage of the many young Falcons that I have ever had to do with; and although her brother became perfectly tame in two or three days, she would always attack my hand in preference to the food that I offered her, and for many months showed an amount of ill-temper very unusual in the "generous" Falcons: her temper has improved with age, and she will now fly fairly well to the lure, but she will not mount high enough to enable her to take Partridges. This is probably the result of a severe attack of the terrible malady known to falconers as "frounce," from which she, and her brother in a less degree, suffered on their passage from Nice to Southampton in the yacht. The male bird was flown "at hack," and trained by the falconer of the Old Hawking Club, who reported him to me as exceedingly docile and very fast on wing, but he was unfortunately killed by a Peregrine before he had moulted. I have purchased a great many of this race of Falcon in Leadenhall Market, all of which were said to have been shipped from Mogador; but although I have frequently met with the typical Peregrine during the winter months in the Mediterranean, the present is the only Peregrinoid form that I have personally found breeding there, and, from my experience, I am inclined to look upon it as the most strictly *marine* (if I may be allowed the expression) of any Falcon, except perhaps *F. eleonoræ.* I have found this race of Peregrine in Iviza and Menorca, and I obtained a fine adult male in the province of Santander in May 1876, this last being the only specimen that I ever met with away from the shores of the Mediterranean. Of many Peregrines obtained by us during the winter and early months of spring on the Guadalquivir all were of the typical European form, and of rather unusually large dimensions.

After this long digression I must return to the "Straits." After shooting a Rock Dove or two from the rocks near the Falcon's nest, we bore away to the south-west, coasting a promontory of the mainland on the eastern side of the Gulf of Trana; but finding nothing there but two Audouin's Gull, which kept out of shot, we returned and landed on the eastern side of the promontory in Agincourt Roads, at the spot where the telegraph cable from Maddalenae merges on the mainland. Here we found nothing but a profusion of a very beautiful and sweetly-scented white lily, quite new to our inexperienced eyes, but probably well known to botanists. We then went off to a sandy beach on the mainland at the head of the roadstead, and explored a little marshy stream which there runs into the sea. The tamarisks were swarming with Turtle Doves, and we noticed many Water-hens, one Mallard, one Marsh Harrier, many Common Brown Linnets, a few Song Thrushes, Corn Buntings, and a fine adult Purple Heron, which fell to my son's gun. On our return we were caught in one of the fierce wind-squalls so frequent in these localities, and found that the yacht had dragged her anchor, and drifted into a somewhat precarious position; however, by getting up steam and with a hawser ashore and two anchors out, we made her snug for the night, and rode out a very violent north-westerly gale. The next day was too stormy for boat-work; two of our party, having borrowed an animal that its owner called "a most famous dog of chase," went ashore on Maddalena to search for Quails, but returned for luncheon without having found one of that species, the bag containing only a few specimens of a yellow Wagtail (*Motacilla flava*), Common Whitethroat, and a Stonechat. I observed several Alpine Swifts hawking high over the town, and in the afternoon we found two empty nests of Blue Rock Thrush amongst the rocks on the northern side of San Stefano, close to our anchorage. Some goatherds on that island, however, were more fortunate, and brought to us a very perfect nest, containing five fresh eggs of "Solitario," as they call the last-named species; this nest consists entirely of fine roots and fibres. On the morning of May 6th the same boys brought to me two nestlings of the Blue Rock Thrush, but they were much too young to keep, and the finders promised, for a small consideration, to put them back into their nest. We shot another Audouin's Gull from the deck of the yacht, and added the Common Buzzard, Cirl Bunting, Goldfinch, and Sandwich Tern to our list of birds identified in this locality.

On May 7th some Neapolitan fishermen brought us a very large Turtle (*Thalassochelys caouana*) alive, which I bought, and, after various experiments in the way of feeding, at length persuaded to take fresh sardines and anchovies very readily. This animal was eventually domiciled in the Reptile House in the Regent's Park, and lived there in apparently good health for a considerable time. From May 6th to 11th the weather was so rough that we could do next to nothing in the way of boating; two or three more Audouin's Gulls were shot from the yacht's deck, but only appeared in couples or singly. We obtained specimens of the Black-headed Warbler (*Sylvia melanocephala*), Dartford Warbler (*Melizophilus undatus*), Sardinian Warbler (*M. sardus*), and Pied Flycatcher on San Stefano; also a nest containing four young Blue Rock Thrushes, of which the sole survivor is at my elbow as I write, and has for nearly five years been my almost constant and very amusing companion. Amongst other peculiarities, this bird, though it has moulted every year in August and September, and is in perfect health, has never assumed the uniform dark blue plumage of maturity, and is now (March 1887), slowly completing an abnormal moult into a still greyer stage of dress than that which it assumed in September 1886.

The morning of the 11th May was fine and calm, so we started early in the steam-launch to explore the Barretini islets, which lie a few miles to the north-west of Maddalena. On our way we stopped to examine a few heaps of isolated rocks, hardly worthy of the name of islands, lying a short distance from the western and north-western coast of Maddalena, and found several nests of Rock Doves containing eggs, several empty but fresh nests of Common Swift, and many young and a few eggs of Herring Gull, but did not even see an Audouin. We found that some Neapolitan fishermen had harried the nearest of the Barretini isles, and we made out their boat off the outlying one; so we had to content ourselves with our luncheon and pipes, and the sight of many Herring Gulls screaming over their pillaged nests, whilst a Raven scolded at us from a crag, and the never-failing Blue Rock Thrushes piped their low sweet song. The next day we went off in a south-easterly direction to Capo di Ferro, on the mainland of Sardinia, but, with the exception of bagging one of four Audouin's Gulls, adding Grey Crow and Common Bee-eater to our Straits' list of birds observed, and the capture of a small but very brilliantly coloured specimen of *Zamenis atrovirens*, we did nothing. A small colony of Bee-eaters were at work on a sandy bank near the head of the Bay of Arraquena, but had not, so far as we could ascertain, begun to lay. The lovely weather and the fine wild scenery of the Sardinian coast amply made up for our want of success; but the main object of our visit to these wilds—*i. e.*, the finding of a breeding-place of Audouin's Gull—was still unattained, and as our time was drawing short and the eggs in the ovaries of the female birds shot by us were very minute, I began to lose hope on this subject. However, on the next morning we set off to explore the islands of Spargi and Spargiotto—the former, a high ridge of rock opposite to the western side of Maddalena, sloping gently to the sea on its eastern side, whilst its west front consists of high precipitous and jagged cliffs, the eastern slopes being thickly overgrown with scrub almost to the water's edge, with here and there a little sandy creek and small patches of coarse grass. On approaching one of these spots from the eastward, we became aware of a group of some twenty-five or thirty Audouin's Gulls clustered on the point of a little promontory; the birds rose and circled over our boat with loud outcries, somewhat resembling those of the Mediterranean Herring Gull, but more plaintive. I believe that we might have shot the whole colony, but I only wanted three to make up a dozen specimens, and these three were secured in as many minutes. Four or five of our party landed and explored the slopes of

Spargi in every direction to a considerable distance, but although they found some six or seven nests, nothing but broken fragments of egg-shells rewarded their search; we were not only baffled, but completely puzzled, as it was obvious that the eggs had not been hatched. None of the Gulls exhibited any traces of having incubated, and it was natural to suppose that had the nests been visited by the Neapolitans, or the two swineherds who were established on the island, they would have carried off the eggs without breaking them; besides this, we could discover no tracks of any sort about the nests but those of the Gulls, so that, literally speaking, the circumstantial evidence was favourable to the innocence of fishermen, swineherds, swine, and goats. Our old guide could not say whether there were any rats on this island, but declared positively that there were none of the dreaded 'pontici,' thereon; and *if* rats were the robbers in this instance, they must have been endowed with a marvellous power of leaving no footmarks on the sand, so we came to the conclusion that the guilt lay with the Ravens, although my own experience of these birds is that they usually drive their beaks into the thick end of an egg and suck out the contents without further breakage, as they fly. Our only plan, then, was to try and forestall these black thieves; and as the Gulls could hardly have finished laying, I despatched my captain with a boat's crew before daylight the next morning with orders to land and visit the nests as soon as they could see; but all in vain! he found the Gulls roosting on the same spot, but nothing more in the way of their productions, and a third visit to the spot proved equally fruitless; though the Gulls remained, and seemed very unwilling to leave the special locality. After our first search, as above recorded, we cruised round the northern end of Spargi, discovering a copious spring of fresh water in a little creek, and a Falcon's eyrie in a high crag, about which both of the old birds were circling and screaming.

Spargiotto consists of a pile of huge rocks which look as if they had been pitched one above the other by Titans at play; amongst these we found many Rock Doves, Blue

Thrushes, a pair of Ravens, and a Common Buzzard, but nothing new to our list. Coasting the western side of Spargi on our return to the yacht we discovered two young Shags which were unable to fly, but which beat us fairly in a long chase by diving under the launch when we imagined that we had cornered them in a shallow creek. These were the only two birds of this species we met with on this voyage that were not strong fliers. On May 15th I despatched our old native with a small collecting-gun, to obtain small birds and eggs; he brought back several cleanly-shot specimens of *Melizophilus sardus* with two nests containing hard-set eggs, and a Wood Lark (*Alauda arborea*), new to our local list. A boy brought off a cock Sparrow of the representative Sardinian species, *Passer saliceti*, alive. I only mention this because the bird in question has for nearly five years thriven in the classical gloom of No. 6 Tenterden Street, and, singularly enough, is the only individual of his race that I have ever seen or heard of alive in this country. A very fine specimen of Dusky Perch (*Serranus gigas*), weighing 22 lbs., was brought on board by some Neapolitans, who said that they had taken it on a long line off Tavolara. I bought this fish for 10 francs, and found its flesh infinitely superior to that of any Mediterranean fish, except Red Mullet, of which I ever partook. We spent the greater part of the 17th May in examining the skeleton and carrying off the jawbones of a huge whale which had been stranded some two years previously on the northern end of Maddalena, and had been towed to a sandy beach at the western extremity of San Stefano, where it was flensed by the people of Maddalena, and its bones picked clean by the Black and Griffon Vultures from the mainland of Sardinia. We saw several of the former and one or two of the latter species circling high in air, and a Raven or two, apparently unwilling to leave the spot that had, no doubt, savoury memories for them, and was, indeed, still redolent of putrid blubber. We left our anchorage soon after daybreak on May 18th, bound for Genoa, but on clearing Maddalena found such a heavy sea from the north-east, that I decided to run up the western coast of Corsica, which I had never seen. Shortly after passing Bonifacio we ran into a dead calm; but in a very short time a fresh westerly breeze came up, we ceased steaming and made sail, but before we had run twenty miles the wind flew to the north-west, and soon hardened into a gale with heavy sea, so we ran in and anchored for the night in 8 fathoms, at the head of the Gulf of Sagona. The next morning, about 10, we left our anchorage under steam, and on clearing the bay found a light north-easterly breeze, which soon increased to a strong wind dead ahead, so that, having nothing particular to call us to Genoa, we shaped our course for Villafranca, thus making a fair wind of it. A weary Turtle Dove vainly attempted to alight on board of us, but must, I fear, have eventually fallen into the sea, as it would not trust itself down the wind. We got into Villafranca harbour about the middle of the night, and moved round to Nice on the following morning. I had not set foot ashore there since 1862, and should not have known the town again, so much had it increased in every direction; but I was glad to find my old friend Louis Galle, naturalist and barber, still alive and flourishing in his little shop on the Cours; he had a few locally rare skins of birds, e. g. *Falco vespertinus*, *Lanius minor*, &c., and assured me of a recent occurrence of *Sterna caspia* at the mouth of the Var. He also had several interesting reptiles alive, amongst them a beautiful specimen of *Coronella girondica*, which I bought and deposited safely in the Regent's Park Reptile-house on our arrival in London on May 25th. I may add that all the specimens of Audouin's Gull obtained by us in the Straits exhibited the peculiar coloration of legs and feet that I have mentioned above.

XXVII.—*On Horsfield's Woodcock,* Scolopax saturata.

By Henry Seebohm.

Since I wrote my paper on the genus *Scolopax* (Ibis, 1886, p. 127), I have had an opportunity of comparing the type of *S. rosenbergi* in the Leyden Museum with two examples of *S. saturata* in the same collection, and I find them to be identical. The type of *S. saturata* was, twelve years ago, in the India Museum. The species was described in 1821 from an example collected by Horsfield in Java; but it may have disappeared before the birds in the India Museum were handed over to the national collection, as it cannot now be found.

It is unfortunate that the type of so interesting a species should have been lost, as no examples are known to exist in any other collection than the Leyden Museum, which possesses two collected by Boie on the mountains of Java. One of these two examples is moulting its quills, and the first primary is not full-grown, being half an inch shorter than the second. In the other example the two first primaries are of about the same length.

In 1869, when Schlegel was describing the type of *Scolopax rosenbergi,* he unfortunately compared it with the example of *S. saturata* in which the first primary was not fully grown. This circumstance—combined, no doubt, with the fact that the Javan example, having been exposed on the shelves of the Leyden Museum to the combined action of more or less dust and sunshine for nearly forty years, had acquired a "museum colour," which contrasted considerably with the fresh-killed example from New Guinea—induced Schlegel to designate the latter as distinct. Horsfield described *S. saturata* as one of the rarest of Javan birds, inhabiting a mountain 7000 feet above the sea-level. Schlegel recorded his supposed new species from the mountains in the interior of the north-western peninsula of New Guinea. The fact that Wallace's Line dividing his Oriental Region from his Australian Region passes between the two localities, and the further fact that in the Moluccas, which lie, if not exactly, at least to some extent between the two localities, a perfectly distinct species of Woodcock, *S. rochusseni,* is found, suggest the probability that the two birds are distinct. This does not, however, seem to be the case. Limicoline birds appear to have originated in the Polar area and to have been dispersed—certainly once, and probably twice—by climatic changes which, by depriving them of food, compelled them to emigrate. Their present distribution is the result of past emigration; but, as might be expected from their great powers of flight, it bears no relation to the zoological regions which control the geographical distribution of Passerine birds.

The Javan Woodcock has been found by two collectors, Horsfield and Boie; and the New-Guinea Woodcock has also been obtained by two collectors, Rosenberg and Bruijn. Salvadori (Orn. Papuasia e delle Molucche, iii. p. 235) records the presence of a second example of the latter species from Mount Arfak, in the same peninsula of New Guinea, in the museum of Count Turati in Milan. It seems therefore impossible to come to the conclusion that Horsfield's Woodcock can be a resident in only one of the two localities where it has been found, and an accidental visitor to the other. Our knowledge of the birds residing in the mountains of the various islands of the Malay archipelago is unfortunately very imperfect, and we can only assume that Horsfield's Woodcock is a resident in the chain of islands from Java to Western New Guinea. It is, however, possible that it may be a migratory bird, breeding in the mountains of South-eastern Thibet and wintering on the islands of the Malay archipelago. That it should be confined to two localities so isolated as Java and Western New Guinea, would be an instance of a discontinuous area of distribution, too unusual to be accepted without much stronger proofs of its correctness than we now possess.

The number of typical Woodcocks is thus reduced to four. No other species of the large genus *Scolopax* have silvery tips to the under surface of the tail-feathers, or transverse instead of longitudinal markings on the crown. These four Woodcocks may be diagnosed from each other with the greatest ease.

	minor	Tibiæ feathered to the joint.
Pale bars on outer webs of primaries	*saturata*	
	rusticula . .	
	rochusseni . .	Pale bars on inner webs of primaries.

None of these three characters, however, are peculiar to the Woodcocks, but are all found in one or other of the Snipes.

XXVIII.—*Some Remarks on Sundevall's Account in the number of Secondaries of Birds.* By Henry Seebohm.

The readers of 'The Ibis' are very much indebted to the Editors of that periodical for giving them a translation of so suggestive a paper as that by Sundevall on the Wings of Birds (Ibis, 1886, pp. 389–457). I use the word "suggestive," because in the portion which I have studied the facts are only approximately accurate, and the reader is left to draw his own conclusions from them. In the first place, we may dismiss the word *arm-remiges* to the limbo of useless synonyms and adopt the commonly used term of *secondary quills*: usually called, for the sake of brevity, *secondaries.*

I propose to confine my remarks to three groups of birds:—*Gallinæ,* or Game Birds; *Grallæ,* or Cranes and Rails; *Limicolæ,* or Plovers and Snipes.

All these birds have 10 primaries; the question to be considered is:—Are there any characters to be found in the secondaries by which these three families may be distinguished from each other?

To begin with the Common Lapwing, *Vanellus cristatus,* the wing consists of—

10 primaries;
12 nearly black secondaries;
3 long green secondaries; beyond which are several abbreviated secondaries, each shorter than the one preceding it.

Sundevall says that it has—

14 secondaries nearly alike in structure and size;
2 secondaries, which, without being abbreviated, possess a decidedly different form;
3 secondaries, decidedly shorter.

What Sundevall means, I am sure I do not know; but suffice it to note that it is only after the 15th secondary that abbreviations begin.

Let us now examine the wing of a Curlew, *Numenius arquatus,* which consists of—

10 primaries;

17 secondaries, the last four of which are each decidedly wider and longer than the one preceding it.

Sundevall says that it has—

15 secondaries, nearly alike in structure and size;
2 which, without being abbreviated, possess a decidedly different form;
3 decidedly shorter.

In this case we agree as to the number of unabbreviated secondaries, though we differ as to the point where the change of shape begins.

The Woodcock, *Scolopax rusticula,* possesses—

10 primaries;
13 secondaries, the last of which is the longest, and is followed by several abbreviated secondaries.

Sundevall says that it has—

12 secondaries, nearly alike in structure and size;
4 decidedly shorter feathers.

The Turnstone, *Strepsilas interpres,* has—

10 primaries;
9 secondaries with white bases;
3 elongated and coloured like the coverts, followed by several abbreviated ones.

Sundevall agrees that there are 12 secondaries unabbreviated, though he divides them differently.

So far we find some difficulty in explaining the figures given by the Swedish naturalist, but we have arrived at the conclusion that the number of unabbreviated secondaries in Limicolæ varies from 12 to 17. I have examined a considerable number of species, and have not yet met with an exception to this rule.

Passing on to the Grallæ, I find the Water Rail, *Rallus aquaticus,* to have a wing constructed as follows:—

10 primaries.
9 unabbreviated secondaries, of which the last is coloured like the succeeding abbreviated ones, the last but one (the 8th) being slightly intermediate.

The wing of the Corn Crake, *Crex pratensis,* is formed on precisely the same model; nevertheless Sundevall, though he agrees that the total number of unabbreviated secondaries is alike in the two species, makes it 10; and, for some inscrutable reason, divides those of the Corn Crake into 9 typical and 1 aberrant, but those of the Water Rail into 7 typical and 3 aberrant.

The wing of the Coot, *Fulica atra,* exactly resembles those of the Corn Crake and Water Rail, but Sundevall makes it consist of 9 typical and 3 aberrant unabbreviated primaries.

If further investigation should prove that in the family Rallidæ there are never more than 9 unabbreviated secondaries, and in the family Charadriidæ never less than 12, we have a most valuable external character by which a Rail may be distinguished from a Sandpiper, and which we may at once apply to the remarkable bird *Tringa leucoptera,* which many ornithologists regard as a Rail. So far as it is possible to ascertain without relaxing the specimen in the Leyden Museum, which is in a very fragile condition, it has at least 10 unabbreviated secondaries, so that the imperfect evidence at our command confirms the original determination of the bird as a Sandpiper.

Turning now to Sundevall's synopsis, we find that a remarkable character presents itself in all the Gallinæ which he appears to have examined. These birds differ from all the others contained in his list in having an abbreviated 1st secondary. Bastard primaries are common enough, especially amongst the family Turdidæ, but bastard secondaries are probably confined to Game Birds.

The wing of the Pheasant, *Phasianus colchicus,* is constructed as follows:—

10 primaries;

1 abbreviated secondary, an inch and a half or more shorter than the rest.

10 unabbreviated secondaries, followed by several abbreviated ones, of which the first is not abbreviated more than an eighth of an inch.

In the Red-legged Partridge, *Caccabis rufa,* the bastard secondary is $1\frac{1}{4}$ inches shorter than the second secondary, but there appear to be only 9 unabbreviated secondaries.

How far the existence of an abbreviated secondary (or, in other words, to what extent the abbreviation of the 1st secondary) extends to the various families in the Order Gallinæ is a question of great interest. Sundevall's attention was probably first directed to the abbreviation of the 1st secondary or 11th quill by Nitzsch, who enumerates the following genera as exceptional in this respect:—*Numida, Polyplectron, Lophophorus, Crax, Penelope,* and *Crypturus.*

In *Numida* the abnormally abbreviated 1st secondary appears to be only about half the length of the rest, but in *Polyplectron* and *Lophophorus* the abbreviation is very slight. It is, however, by no means absent: in both these genera the difference in length between the 11th and 12th wing-feathers is twice as great as that between the 12th and 13th.

Crax, Penelope, and *Crypturus,* on the other hand, have the 11th quill scarcely shorter than the 12th. It is very satisfactory to find that the Hemipodes and the Sand Grouse, which differ from the Grouse and Pheasants in having two layers of spots on their eggs, also differ from them in not having the 1st secondary abbreviated. The importance of the character is also increased by the fact that it confirms Huxley's divisions of the true Gallinæ into Peristeropodes and Alectoropodes. The latter have the first secondary abbreviated, but the former have not.

It is very difficult to examine the quills of a bird in the skin, and a series of expanded wings of typical birds of all the various genera would be very interesting, and might lead to important results.

XXIX.—*Descriptions of new Species and Subspecies of* Trochilidæ. By Hans von Berlepsch.

1. PHAËTHORNIS NATTERERI, sp. nov.

Phaetornis longuemareus, Pelzeln (nec Less.), Orn. Brasil. p. 27 (Matogrosso).

Ph. nattereri, sp. nov., *Ph. longuemarei* affinis, differt rectricibus omnibus imprimis externis multo angustioribus, intermediis inter apicem album et basin pallidius bronzinum griseo-brunneis (nec nigrescentibus), submediis ante apicem album læte rufis, externis apice et extus latissime rufis: corpore subtus pallidiore, nigredine gulæ vel nulla vel inconspicua: tectricibus subcaudalibus fulvis nec albis, supracaudalibus fere unicoloribus badio-rufis. Long. tot. circ. 100, al. 48–45¾, rectr. intermed. 47–44, submed. 34½–34, extern. 20½–18¾, rostr. 24¾–22¾ mm.

Habitat. Prov. Matogrosso, Brasil. centr.; Caiçara (October) and Engenho do Cap. Gama (September) (coll. Joh. Natterer, 6 specimens).

Mus. Vindob. et H. v. B.

Having always suspected that the Humming-bird from Matogrosso named "*Phaetornis longuemarei*, Less.," by Pelzeln must really belong to an undescribed species, I lately asked Herr von Pelzeln to send me some of Natterer's skins for inspection. My distinguished friend most obligingly sent me four specimens (out of six collected by Natterer) for comparison, one of which I was allowed to retain for my own collection.

As I had anticipated, the Matogrosso bird proves to be quite different from *Ph. longuemarei*, Less., with which Herr von Pelzeln, for want of authentic specimens, had identified it; and I have now very much pleasure in describing it as a new species, and in naming it after its illustrious discoverer, the late Johann Natterer; Herr von Pelzeln having kindly allowed me to do so.

The four specimens sent for my inspection all agree among themselves in the characters distinguishing them from *Ph. longuemarei*, of which I have before me several specimens from Cayenne and Trinidad.

The most important point of distinction seems to consist in the form of the tail-feathers, which in *Ph. nattereri* are rather narrow, while they are unusually broad in true *Ph. longuemarei*. The coloration of the tail in *Ph. nattereri* is altogether different, the two middle tail-feathers being pale brownish grey in their middle portion, not black or blackish as in true *Ph. longuemarei*, and presenting a paler bronze tint to their bases. The next following pair of rectrices possess a great amount of rufous on the outer webs, and a slight rufous suffusion on the inner web before the white tips. In true *Ph. longuemarei* there is no, or but little, rufous tint on the submedian tail-feathers.

The outer tail-feathers in *Ph. nattereri* possess very long rufous tips; in *Ph. longuemarei* there is a narrow white or rufous border to the tip. The middle portion of these rectrices in *Ph. nattereri* is only slightly tinged with violaceous on the inner web, while they are altogether blacker for a long distance on both webs in *Ph. longuemarei*.

Besides these differences in the colour of the tail, I observe that in *Ph. nattereri* the underparts of the body are a paler fulvous, the jugulum only being slightly suffused with rufous. The throat does not show the large black spots so conspicuous in true *Ph. longuemarei*; these in *Ph. nattereri* are either completely wanting or invisible except at the extreme bases when the feathers are raised. The top of the head is a paler sandy rufous-brown. The upper tail-coverts are nearly uniform dark rufous, with no trace of the green spots to be seen there in the other species. The black tip to the under mandible is reduced to a minimum, being much shorter than in *Ph. longuemarei*.

I may add that, by the courtesy of Oberamtmann F. Heine, I have been able to examine at St. Burchard, near Halberstadt, the type specimen of *Ph. apheles*, Heine, described in Journ. f. Orn. 1884, p. 235, said to have been collected by Warscewicz in Northern Peru. The type is a very bad and imperfect specimen, but appears to me to belong to another distinct species of this group, differing from *Ph. nattereri* by the pure black and broad subapical band to the outer tail-feathers and in its much shorter wings. In other respects it agrees well with *Ph. nattereri* both in having no traces of black spots on the throat, as well as in the narrowness of the tail-feathers and the large amount of rufous to the tips of the outer tail-feathers, which characters suffice to distinguish it at a glance from the allied *Ph. longuemarei*.

2. Iache lawrencei, sp. n.

Circe latirostris, Lawr. (nec Swains.) Proc. Boston Soc. N. H. 1871 (Tres Marias).

I. lawrencei, sp. n., *I. latirostri* (Sw.) affinis, differt gula circumscripte splendide glauco-viridi (nec chalybeo-cyaneo), tectricibus subcaudalibus obscure griseis disco late chalybeo-nigris, tectricibus supracaudalibus item obscurius viridibus. Long. tot. 90–93, al. 53½, caud. 34½, rostr. 19–17½, caudæ furca 8½–8 mm.

Habitat in insulis Tres Marias (coll. Grayson et Forrer).

Mus. U. S. National Mus. et Mus. H. v. B. (two ♂ ad., Tres Marias, obtained by Alphonse Forrer, 23rd February and 4th May).

The *Iache* inhabiting the Tres Marias Islands, hitherto believed to be identical with the mainland species, viz. the well-known *I. latirostris* (Sw.), on closer examination proves to be perfectly distinct from it. The chief point of difference is to be found in the colour of the throat, which in the Tres Marias bird is of a brilliant deep golden green with a slight shade of bluish green, while it appears splendid steel-blue or violet water-blue in *I. latirostris*. As a rule, in *I. latirostris* the breast and abdomen show a bluish-green tint, while in the Tres Marias bird a rather golden or bronzy hue is prevalent on these parts of the body.

Another important character by which the new species might well be distinguished lies in the pattern of the under tail-coverts, which, in this bird, are conspicuously spotted with steel-black and broadly margined with greyish white, producing a rather sombre colouring. In *I. latirostris*, on the contrary, they appear nearly uniform white, presenting only indefinite spots of pale smoky brown, which are darker and larger on the smaller coverts, but nearly absent on the longer ones.

As a rule, the upper parts in the Tres Marias bird are more indued with coppery bronze, but I have specimens of *I. latirostris* which in this respect are hardly different from it. The upper tail-coverts in the former are certainly of a darker or a more sombre green. It appears that the new species generally possesses a shorter bill, but I have specimens of *I. latirostris* before me which, in this character, do not differ from a long-billed specimen from the Tres Marias. I have long possessed a Humming-bird obtained by Forrer in the Tres Marias Islands (received from the collector in October 1882), and always remarked its difference from true *I. latirostris.* For some time I was inclined to believe this bird to be the same as *I. magica* (Muls. & Verr.) described from Mazatlan; nevertheless, entertaining some doubt about its correct determination, I sent it over last year to my esteemed friend Mr. Geo. N. Lawrence, of New York, asking him to compare it with the type specimen of *I. magica* in the famous collection of Mr. D. G. Elliot. Mr. Lawrence showed my bird to Mr. Elliot himself, who replied that he could not make the desired comparison, his collection being at that time inaccessible, but that he strongly believed my bird to be quite different from *I. magica,* the latter being of rather inferior size &c. At the same time Mr. Lawrence confirmed my belief that the Tres Marias bird was quite different from true *I. latirostris,* as did also Mr. Ridgway, who told me that my specimen exactly agreed with a skin belonging to the U.S. National Museum collected in Tres Marias by the late Col. A. F. Grayson. As regards the skins of *Iache* collected near Mazatlan by Grayson, Mr. Ridgway informed me that they were in no way different from specimens of true *I. latirostris* from different parts of Mexico and Arizona. Concerning *I. magica,* Bourc. & Muls., Mr. Ridgway suggests the probability of its being founded on an immature specimen of *I. latirostris.*

Finding the material for comparison at my own command still incomplete, I wrote to Mr. A. Forrer, of Santa Cruz, Ca., asking him to send me all the specimens of *Iache* collected by him. He immediately forwarded five of the desired birds to me, viz. one collected in the Tres Marias, agreeing perfectly with my former specimen; further, three skins collected near Mazatlan, which generally agree well with specimens of true *I. latirostris* from Central Mexico, but are of somewhat inferior size; and a fifth skin exactly identical with the Mazatlan specimens, but said to have been obtained in

Tres Marias! I have some doubt whether the locality given to the last specimen may not be erroneous. It is quite likely that the label affixed to this bird may have properly belonged to another, Mr. Forrer not being in the habit of fastening the labels to the legs of his Humming-birds. In an accompanying letter Mr. Forrer kindly informed me that he strongly believed there were two species of *Iache* inhabiting the countries visited by him, and that from his recollection he believed both to occur in the Tres Marias, while on the mainland he observed but one species, viz. the blue-throated *I. latirostris*.

Having thus far satisfied myself of the distinctness of the green-throated *Iache* from the Tres Marias, I take the liberty of naming it after Mr. Geo. N. Lawrence, to whom the ornithology of those islands owes so many interesting additions, and who is now one of the best authorities on Humming-birds. Nevertheless, in my mind, a further examination of the type specimen of *I. magica* in Mr. Elliot's collection is highly desirable.

3. EULAMPIS JUGULARIS EXIMIUS, subsp. nov.

Simillimus *E. jugulari*, sed rostro multo longiore fortiore et magis arcuato, alis paullo brevioribus, necnon capite supra et dorso sordidius nigris magis viridi mixtis, distinguendus.

E. jugularis eximius. Long. tot. 121–124, al. 73–72½, caud. 43–40, rostr. (culm.) 28½ mm.

E. jugularis ex Martinique (three specimens measured). Long. tot. 107–110, al. 77¾–76, caud. 43¾–42, rostr. (culm.) 23–19¾ mm.

Habitat in ins. Nevis (*fide* Whitely).

Mus. H. v. B. (two specimens received from Whitely).

The difference of the new subspecies from true *E. jugularis* (Linn.) chiefly consists in its much longer, stronger, and more curved bill; at the same time the wings are a little shorter. Regarding coloration the two are very similar; nevertheless I observe that in my new subspecies the black of the upper part of the head and back is much duller and much mixed with green, all these parts appearing deep velvet-black in the true *E. jugularis,* with rather a bluish than a greenish suffusion. The green of the upper wing-coverts in the new bird is less indued with golden bronze than in *E. jugularis* proper.

The two skins of my collection pretty well agree in the characters distinguishing them from true *E. jugularis.* I got these birds in February last year through the well-known dealer in natural objects, Mr. Henry Whitely, of Woolwich, who labelled them as coming from the island of Nevis. I have no reason to doubt the correctness of this statement, although it requires further confirmation. I may add, however, that in the same consignment Mr. Whitely also forwarded to me a specimen of *E. holosericeus longirostris,* Gould, a subspecies differing from the true *E. holosericeus* in the same way that my new *E. jugularis eximius* does from *E. jugularis,* and that this skin again bears a label on which, in Mr. Whitely's handwriting, "Nevis" is noted. Therefore I think it very likely that both these long-billed forms of the two species of *Eulampis* are to be found on one and the same island, and this may be the little-known island of Nevis.

4. DIPHLOGÆNA IRIS BUCKLEYI, subsp. nov.

♂ *ad.* nitore pilei in fronte et ad latera minus rubro potius aureo-viridi, gulæ gemma pallidius amethystina viridi adumbrata, necnon abdomine, uropygio rectricibusque obscurius cinnamomeo-brunneis a mare *Diphlogænæ iris* distinguendus. ♂ ad. Long. tot. 135, al. 82, caud. 57, rostr. 27¾, caudæ furca 17 mm. ♀ ad. Long. tot. 130½, al. 76, caud. 50, rostr. 29, caudæ furca 11 mm.

Habitat. Ecuador (eastern side of the Andes?), coll. C. Buckley.

Mus. H. v. B. (♂ and ♀ received from H. Whitely).

This is but a slight subspecies of *D. iris,* Gould (the latter having been originally described from Northern Peru), representing it in Ecuador, probably on the eastern side of the chief range of the Andes, where it was collected by the late Mr. Clarence Buckley, to whom science is indebted for so many interesting discoveries. I have accordingly named it in memory of him.

I must remark that my friend Dr. Taczanowski, of Warsaw, first pointed out to me in what way the Ecuadorian bird differed, in his opinion, from a series of skins of true *D. iris* collected near Chachapoyas, N. Peru, by Jean Stolzmann; at the same time suggesting to me to describe the Ecuadorian form as a new species. The chief distinction, as expressed in the above diagnosis, will be found in the different shade of the front part and the sides of the pileum, where, in the adult male of true *D. iris,* the lustre is decidedly more crimson, while a more golden, or even a greenish-golden, hue is observable on *D. iris buckleyi,* especially on the front. The amethystine gem-spot in the middle of the throat is of a lighter shade, and somewhat mixed with a greenish tint, which is not to be seen in true *D. iris.* The throat and breast are of a lighter and more golden green, while they show a deeper bluish-green lustre in *D. iris.* It appears also that the green of the breast comes further down in the Ecuadorian bird, being more restricted in the Peruvian form. The hind neck and upper part of the back are of a rather lighter shade, more of a greenish than of a blackish-bronze colour. The castaneous parts of the body, especially the abdomen, are of a darker shade, and the tertiaries are not margined exteriorly with a black border, which seems to be characteristic of true *D. iris.*

5. CHLOROSTILBON COMPTUS, sp. nov.

♂ *ad.* pileo omnino squamoso splendidissime aureo-cupreo, gula pectoreque splendide aureo-viridibus, abdomine purius aureo micante: corpore superiore reliquo semilucente aureo-viridi cupreo perfuso, tectricibus caudæ superioribus et inferioribus purius viridibus: caudæ profunde furcatæ rectricibus chalybeo-nigris nitore viridescente: rostro penitus nigro. Long. tot. 83, al. 48¾, caud. 29½, rostr. 13¾, caudæ furca 7½ mm.

Obs. Ch. melanorhyncho, Gould, ex Quito, mandibula penitus nigra affinis, differt pileo splendidissime aureo-cupreo nec aureo-viridi, dorso magis cupreo perfuso, abdomine magis aurato, rectricibus paullo angustioribus et viridescentioribus, necnon rostro paullo breviore et graciliore, alis paullo brevioribus, rectricibus tamen longioribus.

Habitat in Antioquia; Terico or Caramanto (*fide* Schmey). Specimen typ. unic. in Mus. H. v. B. asservatum (no. 6688).

The type of this description was forwarded to me in October 1879 by a dealer, Mr. Schmey, of Coburg, together with other skins received directly from the districts of Terico and Caramanto, in Antioquia.

Chl. comptus, Berl., evidently comes nearest to *Chl. melanorhynchus*, Gould (=*angustipennis*, Elliot, nec Fras.), of Quito; but having examined a large number of skins of the latter species, I have satisfied myself that the characters by which the Antioquian bird differs from them, although small, are well founded. They consist chiefly in the different lustre of the upper parts of the head, which is of an exceedingly beautiful coppery-golden hue (being greenish golden in *Chl. melanorhynchus*). The back is also more indued with coppery bronze; the throat and breast appear more golden, instead of bluish green. The abdomen is much more golden. The tail-feathers are somewhat narrower and of a more greenish steel-blue. The bill is somewhat shorter and slenderer; the wings also shorter; the tail, on the contrary, is rather longer than in true *Chl. melanorhynchus*.

6. CHLOROSTILBON SUBFURCATUS, sp. nov.

Chlorostilbon prasinus, Salvin (nec Less.), Ibis, 1885, p. 436 (Roraima).

♂ pileo squamoso, regione mystacali, mento genisque splendidissime aureis; gula, jugulo pectoreque superiore splendidissime aureo-viridibus cærulescente lavatis: abdomine splendide æneo-viridi, aureo perfuso, corpore superiore reliquo obscurius aureo-viridi semilucente: caudæ subfurcatæ rectricibus chalybeo-nigris: rostro nigro.

♂ fœminæ *Chl. atalæ* (Less.) simillima.

Obs. Chl. a *Chl. prasino* (Less.), ex Cayenna, cui affinis, jugulo cærulescente et *cauda subfurcata nec rotundata*, necnon alis caudaque multo longioribus, a *Chl. daphne*, "Bourc.," Gould, rostro multo breviore, jugulo minus læte cærulescente et cauda distinctius furcata, distinguendus.

8 ad. (♂). Long. tot. 77–72, al. 47½–45½, caud. 26–24½, rostr. 14–12¾, caudæ furcæ 3¾–2¼.

2 ad. (♀). Long. tot. 76–75, al. 46, caud. 26–25½, rostr. 14¾–14½, caudæ furcæ 2 mm.

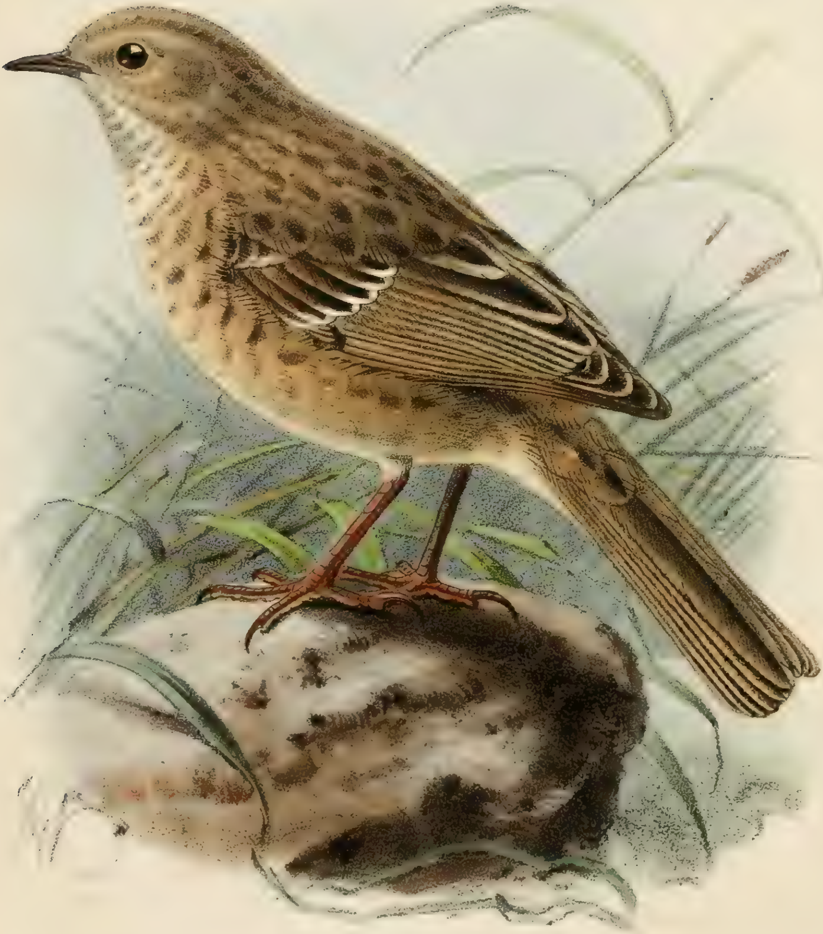
Habitat. Roraima, Brit. Guiana, 3500–4500 feet (H. Whitely, jr., coll.).

Mus. Salv. & Godm. and H. v. B. (In my collection there are eight adult males from Roraima, 8th and 21th August, 4th October, 1st, 2nd, 6th, 8th November, and two females, 29th January and 28th September, collected by H. Whitely, jr.)

The large series of skins of this apparently new species now before me enables me to speak more confidently about its distinctness from the allied forms of this difficult group. It is evidently nearly allied to *Chl. prasinus* (Less.) of Cayenne, with which my friend Mr. O. Salvin has united it; but in my opinion the bluish tinge of the fore neck (which is present in all my Roraima birds, whilst it is altogether absent in an undoubted Cayenne skin of my collection), the distinct and deep emargination of the tail, showing an approach to *Chl. atala* (while in true *Chl. prasinus* the tail is rounded, the outer rectrices being shorter than the middle ones), and the much longer wing- and tail-feathers are characters by which my new species will be recognized *primo visu.* Perhaps there exists a still closer relationship between the new species and a bird inhabiting Upper Amazonia, which I believe is entitled to bear the name *Chl. daphne*, "Bourc.," Gould. Nevertheless two skins in my museum from Olivença (Upper Amazons) and Yquitos? (*Whitely*) are different from *Chl. subfurcatus* in possessing much longer and stronger bills, and in presenting a much more decided blue shade on the throat and fore neck. Further, the emargination of the tail is much less than in *Chl. subfurcatus.*

Muenden, March 1887.

[illegible] Pl. IX.



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XXX.—*On some new or rare Palæarctic Birds.* By Dr. M. Menzbier, Professor in the University of Moscow.

(Plate IX.)

I give herewith the descriptions of some new and a few notes on some little-known Palæarctic birds, based upon the specimens preserved in the late Mr. Severtzow's and my own ornithological collections.

Tharrhaleus pallidus, sp. nov. (Plate IX.)

Th. pallidus: supra brunnescens, subtus flavescens, gula et pectore brunneo variegatis.

Dimensions. ♀: wing 75 millim., tail 68, bill 12, tarsus 19.

Description. Legs and feet flesh-coloured; bill brown, paler on the lower mandible and at the base. Plumage above earth-brown, under surface of the body whitish yellow. The head, back, and scapulars pale earth-brown, each feather earth-brown broadly margined with ochreous; wing-coverts brown, margined with whitish, the greater broadly margined with ochreous on the outer webs and with whitish on the tips; upper tail-coverts more uniformly pale brown. Lores and ear-coverts brownish; chin brownish, each feather brown margined with whitish; throat, breast, abdomen, and under tail-coverts whitish yellow, with brown on the throat and breast, each feather of the last mentioned parts being brown on the basal half; flanks brownish, each feather with a browner shaft-stripe. Wing and tail-feathers brown margined with ochreous.

There can be no doubt that in the more worn plumage this species would have more dusky and uniformly coloured chin, throat, and breast.

The young bird (in the first plumage) is similar to the adult in the shades of its colour, but has the brown on both the upper and under surfaces of the body more intense.

Two specimens of this new *Tharrhaleus* were obtained by Mr. Severtzow's collector in North-western Mongolia, near Khobdo. The bird probably breeds in the branches of the Altai Mountains, and winters in the plains of Mongolia.

TROCHALOPTERON PRJEVALSKII, sp. nov.

Trochalopteron ellioti, Prjev. "Mongolia and the Tangut Country" (in Russ.), p. 66 (1876).

Troch. ellioti similis, sed major, rostro validiore, colore toto brunneo-grisescente, capite pallidiore, alarum colore cinerascente nec ferrugineo prædominante, rectricibus duabus medianis cinereis, albo terminatis.

Dimensions. ♂: wing 103 millim., tail 130, bill 9, tarsus 35; ♀: wing 98, tail 125, bill 9, tarsus 33.

Description. Legs and feet flesh-coloured; bill black. Plumage above greyish brown, under surface of the body clear brown. The top and back of the head and back of the neck whitish brown; upper back, scapulars, and wing-coverts greyish brown, each feather of the back and scapulars tipped on a brown ground with whitish; lower back and upper tail-coverts brownish grey. Lores dark brown; ear-coverts brown. Sides of the neck, chin, and throat clear brown each feather margined on the top with greyish white; breast reddish brown, flanks greyish brown, abdomen rufous, under tail-coverts ferruginous. Quills brownish black, with a ferruginous patch on the basal half of the outer webs; primaries conspicuously margined on the outer webs with bluish grey, secondaries and tertiaries gradually passing into slaty grey. Tail slaty brown, each feather broadly tipped with white; two middle tail-feathers slaty grey throughout their length, the other washed with ferruginous on the basal half of the outer webs, two exterior excepted.

Female similar to the male (specimens in our collections in rather worn plumage).

This species was discovered by General Prjevalsky in the mountains of Kan-sou, and I am pleased to propose its specific name in honour of the famous traveller. My description is based upon the two specimens from Gen. Prjevalsky's collection (♂ ♀) obtained in May in Kan-sou, and now preserved in Mr. Severtzow's ornithological collection. Two typical specimens of *Trochalopteron ellioti*, obtained by Père David, are before us for a comparison with its nearest ally.

GECINUS ZARUDNOI, sp. nov.

In the Bull. des Nat. de Moscou, 1886, No. 2, I published a description of a new species of Woodpecker, *Gecinus flavirostris,* received from my friend Mr. Zarudnoi. Since that notice was issued I have received the typical specimens of this interesting bird and find that it is a near ally of *G. squamatus* of the Himalayas, of which a specimen is before me for comparison. Now, after receiving 'The Ibis' for January 1887, I find that our bird has been also described by Mr. Hargitt under the name *G. gorii.* Without doubt the last name must be considered a synonym, the specific name proposed for this bird by Mr. Zarudnoi having a priority of some months. But unfortunately the specific name *G. flavirostris* cannot stand for Zarudnoi's Woodpecker, this name having been previously given to another Woodpecker (*G. flavirostris,* Verr., from Khukhu-nor). I therefore propose that Zarudnoi's Woodpecker should be known as *G. zarudnoi,* that gentleman having been the first to publish this Afghan species as new to science*.

It is seldom that the history of a bird is so brilliant as in the case of this Afghan species, which is so fortunate as to have received three names in the course of four months.

PHASIANUS PRINCIPALIS, Sclater.

Two species of true Pheasants have been lately established as new to science—*Ph. principalis,* Sclater, from the Bala Murghab, Northern Afghanistan, and *Ph. komarowi,* Bgdn., from Aschabad. Since I received both the descriptions, I have had an opportunity of comparing the typical specimen of *Ph. komarowi* with birds from Bala Murghab, and after a careful comparison I find that they are the same. *Ph. principalis* having been established a month before *Ph. komarowi,* the latter name must become a synonym. The geographical range of this Pheasant is as follows. It is very common throughout the country about the rivers Murghab, Tedshent, and Dushak, also in the district of Kaakuk, and along the rivers running from the mountains of Deregez and Keliat to the N. and N.E., while more to the west, in the country about the rivers Atrek, Chandyr, and Sumbar, the beautiful *Ph. persicus* takes its place.

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* [Under these circumstances, in our opinion, Mr. Hargitt's name *G. gorii* should stand.—EDD.]

TETRAO UROGALLUS, var. URALENSIS, subsp. nov.

T. rogallo similis, sed ventriculo albo.

This pretty race of the Capercailzie inhabits only the pine- and birch-woods in the country of the southern branches of the Ural. Its breeding-range is limited probably, on the west and north, by the river Belaja, and on the north by the river Ui. In its habits the Bashkirian Capercailzie resembles the Black Grouse more than the typical Capercailzie.

XXXI.—*A List of the Birds of Portugal.*

By WILLIAM C. TAIT, Oporto.

[Continued from p. 201.]

111. CYPSELUS APUS (Linn.). "Pedreiro," Oporto, Penafiel, Vianna, and Redondella, Galicia; "Chião," Oporto; "Papalvo," "Guincho," "Gavião," Penafiel; "Arvião," "Andorinhão," Peniche; "Zirro," Val de Mendiz; "Cortavento," Sta. Clara a Velha and Algarve; "Ferreiro," Coimbra Museum.

The Swifts arrive at Oporto from the 6th to 15th of April, and the last take their departure about the 15th to 21st of September, the greater number having already gone by the end of August. At the seaside they remain later; at Leça de Palmeira, in 1883, I saw them almost daily until the 4th, and one as late as the 7th October.

On the 9th September, 1881, I saw a Swift enter its nest under a tile of the roof of a shed of the Oporto customhouse, and on the 12th and 21st I saw one of these birds flying over my garden, probably one of the same pair. Its companions had been gone many days previously. On the 16th of September, 1883, I saw a Swift visit its nest at Leça de Palmeira. It has been said that the migratory instinct is so strong that birds will leave their young when the usual time for migrating arrives, but in the above instances such was not the case. The maternal instinct is in fact so strong through nature that in many instances it overcomes every other. It has surprised me to meet with the Swift circling about in flocks over the summit of our higher mountains. One would think that the high winds usually prevalent there would have blown away any few insects which might rise so high.

It is possible that *Cypselus pallidus* may also be found in this country.

112. CYPSELUS MELBA (Linn.).

On April 16th, 1884, I saw two Alpine Swifts flying about near the old Moorish castle at Silves, and on the 22nd two more near Monchique, Algarve; and on the 28th I received a specimen from Alpiarça, near Santarem, obtained at Alcobaça. In the Lisbon Museum there are a few specimens from the bathing-village of Nazareth. From Alpiarça I am informed that when the brushwood on the commons is fired in August, a large Swift with a white belly appears and snaps up the grasshoppers and other insects which fly from the flames and smoke. It is not seen there at other times. In the north of Portugal I have never observed this species.

113. CAPRIMULGUS EUROPÆUS, Linn. "Noitibó," in many provinces; "Boas noites," Oporto and Alto Douro; "Cá vai," Abrantes; "Pinta cega," Mogadouro, Alto Douro.

The Nightjar is a summer visitant to Portugal. Common on the banks of the river Douro, and may be seen hawking for insects over the surface of the water near Melres; scarcer near Oporto.

It is pretty common on passage in autumn about the woods at the mouth of the Douro. On the evening of September 28th, 1883, I saw one of these birds pass over the sand of the seashore from north to south in a pretty straight course, with the usual flitting from side to side. I have met with it in the Alto Douro and at Abrantes. No doubt it is generally distributed in such an insect-abounding country as this.

114. CAPRIMULGUS RUFICOLLIS, Temm.

There is a single specimen of the Red-necked Nightjar in the Lisbon Museum, obtained in the neighbourhood.

115. Dendrocopus major, Linn. "Pêto malhado," Oporto, Melres, &c.; "Cavallo rinchante," Abrantes.

The Great Spotted Woodpecker occurs in the neighbourhood of Oporto, especially about Entre Rios and Melres. I saw one once at Candal on the opposite side of the river to Oporto, and also near Braga and Entre os Rios. It is reported to me from Villar chã da Maia, the river Caima, Penafiel, Alpiarça, Abrantes, and various other localities; but it is nowhere so abundant as the Green Woodpecker.

116. Dendrocopus medius (Linn.).

There were, in 1880, four specimens of the Middle Spotted Woodpecker in the Lisbon Museum, of which two were from Coimbra, one from Queluz, and one from Cintra.

117. Dendrocopus minor (Linn.). "Pêto gallego," Penafiel.

I have a specimen of the Lesser Spotted Woodpecker obtained at Penafiel, where it is said to be rather common and has a local name. A head and wings were brought to me from the wine-district up the Douro; and the Coimbra Museum possesses specimens from the neighbouring Cegonheira. Although I have looked frequently for this species, I have never been able to meet with it in the woods.

118. Gecinus sharpii, Saund. "Pêto real," "Pêto verde," Oporto; "Picapau," Anchora; "Pêto amarello," "Marellão," Melres; "Pêto verdeal," "Pêto rinchão," Caldas d'Aregos; "Picapau verde," "Cavallo rinchão," Coimbra; "Cavallo rinchante," Abrantes; "Cavallinho," Algarve.

Sharpe's Green Woodpecker is very abundant all over Portugal, its loud laughing alarm-note being heard in every large pine-wood. The country people say that it attacks ants' nests, and in consequence its flesh acquires a nasty taste: perhaps from formic acid.

119. Iynx torquilla, Linn. "Pêto da chuva," Oporto; "Retorta," Penafiel; "Torcicollo," "Piadeira," "Papaformigas," Coimbra Museum.

The Wryneck's note is first heard at Oporto from the 22nd of March to the 5th of April, and my brother Alfred saw one on the 10th of March of this year near Povoa de Lanhoso, neighbourhood of Braga. This species is abundant in gardens, orchards, and on the pollard-oaks on which the vines are trained in the province of the Minho; and its piping note is heard wherever one goes in the spring. Most of them leave in September, but some remain till the middle of October, and I saw one on November 3rd near Abrantes. Dr. Carvalho reports that the Wryneck arrives at Coimbra from the 20th of March (1884) to the 5th April (1879), and leaves between the 10th and 19th October.

120. ALCEDO ISPIDA, Linn. "Rei do Mar," Valença, Anchora, Vianna do Castello; "Marisqueiro," "Passaro ribeiro," Vianna do Castello; "Marinheiro," Caldas do Gerez; "Chasco do rego," Villar Chã da Maia; "Pisco ribeiro," "Pica peixe," "Passa rios," Oporto; "Guarda rios," Estarreja; "Piçorelho," Aveiro; "Juiz de rio," Peniche; "Rei señor de la Mar," Galicia.

The Kingfisher has more popular names and attracts the attention of the peasants more than any other bird. They look upon it as the type of all that is beautiful. Abundant on all the streams, it appears to be more numerous near the coast on estuaries and lagoons during the winter months.

The peasants on the river Minho tell me that the skin of the Kingfisher is efficacious in keeping moth away from woollen clothes *. If so, it is probably the oily smell which is effectual.

121. CORACIAS GARRULA, Linn.

So far as my experience goes, the Roller is uncommon in Portugal. Dr. P. d'Oliveira, of oiCmbra, showed me a specimen in his collection, and the wing was given to me of one which had been shot near Palhal copper-mines, Albergaria Velha. Under date of July 20th, 1883, Dr. Carvalho, of Coimbra, wrote me that a specimen had just arrived from the Coimbra Museum. I was disappointed at not meeting with

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* [This belief is of unknown antiquity, and has been recorded by Albertus Magnus.—EDD.]

this species on the banks of the Guadiana and in the Algarve, in April.

122. Merops apiaster, Linn. "Melharuco," "Abelharuco," "Abelhuco," Alto Douro; "Gralha," Caldas d'Aregos; "Melheiros," Abrantes and Santarem.

The Bee-eater is seldom seen so near the sea as Oporto, but on Sept. 10th, 1878, I shot one at the mouth of the Douro on passage, and another was shot a short distance off on the same occasion. It is abundant about Caldas d'Aregos and in the wine district of the Alto Douro, and still more so in the south of Portugal. At Abrantes they can be heard any day chattering at a considerable height, flying in flocks with a strong elegant flight. Arrives at the beginning of April and leaves in August and beginning of September. As they make so much havoc among the bees, the country people wage war on them whenever they can.

123. Upupa epops, Linn. "Poupa," "Poupa-pão," Lamego; "Bubella," Galicia.

The Hoopoe is a summer visitant and one of the first of the insectivorous birds to arrive in Portugal. The Lamego people say that it is the herald of the Cuckoo, and that when its note is much heard it is a sign of a good harvest; but I have seen the Hoopoe much earlier than the Cuckoo—near Oporto as early as the beginning of March, and in the Algarve on the 18th of February. The departure takes place in September. Hoopoes swarm in some parts of the Minho, and their soft musical note lends an extra charm to the green woods. They do not seem to be so abundant in the Algarve.

124. Cuculus canorus, Linn. "Cuco."

About Oporto the arrival of the Cuckoo is said to be expected after St. Joseph's day (March 19th), and I have generally heard it in the first week in April. Dr. Carvalho informs me that the Cuckoo arrives at Coimbra from the 11th of March (1875) to the 12th of April (1877). My observations do not enable me to fix the date of departure. I shot a young bird of the year on September 3rd, 1878, at the mouth of the Douro, at the time of the passage of the Turtle Doves. It has surprised me to find the Cuckoo on the top of some of the serras; for instance, one on the north side of the Caldas do Gerez. I have noticed that when the Cuckoo utters its note flying, it expands its breast after the manner of a Pouter Pigeon, and it is comical to see the curious antics and gesticulations employed by the male Cuckoo to court the female, with much bowing and turning from side to side, and spreading of the tail like a fan.

At Caldas do Gerez I was told that a young Cuckoo met its death in a curious manner. So voracious was it that it seized the head of its foster-mother, a Stonechat, and tried to swallow it: with the result that both the young Cuckoo and the Stonechat were choked.

125. COCCYSTES GLANDARIUS (Linn.). "Cuco rabilongo," Coimbra Museum.

The Great Spotted Cuckoo is scarce in the neighbourhood of Oporto. On May 23rd, 1880, two of these birds flew close over my head near Leça de Palmeira creek, and specimens have been obtained at Ovar and near Oporto. It appears to prefer the neighbourhood of marshy ground.

126. STRIX FLAMMEA, Linn. "Coruja," Portugal and Galicia.

The Barn Owl is resident and generally distributed. It nests in the ruins of the Serra do Pilar convent and the old powder magazine of the Afurada, both near Oporto, and frequents the belfry towers of the country churches.

127. ASIO OTUS (Linn.). "Môcho."

The Long-eared Owl, obtained by myself and others near Oporto, were all found in the winter, and I cannot say whether this species remains here for the summer.

128. ASIO ACCIPITRINUS (Pall.). "Môcho," "Coruja do nabal."

The Short-eared Owl is common on the drier flat ground of the extensive marshes near Ovar, Estarreja, Aveiro, &c. I have often put them up while snipe-shooting and do not let them off, as I believe they feed on the Snipe and other birds at night, a collection of feathers showing where they have had a meal. During the day they sleep on a dry patch of rice-stubble, in long grass or rushes. A friend was out shooting, and on his dog coming to a point he saw one of these Owls on the ground with a Quail in its claws. The Owl rose and on firing he brought it down, when the Quail, which was little hurt, flew away.

I have noticed the Short-eared Owl from the 18th October to the 6th January, and have not met with it on the same ground in the spring, summer, or autumn, nor in any other part of Portugal. On November 1st, 1879, I put one up in the daytime on the large spit of sand at the entrance to the river Douro; it was seated on a log of wood and was probably on passage.

129. SYRNIUM ALUCO (Linn.).

I have seen only one specimen of the Tawny Owl in this country and that had been shot at the mouth of the Douro. It is said to be common on the upper district of the Tagus (Ribatejo), and I think it frequents the wide moors of the Alemtejo.

130. SCOPS GIU (Scop.).

The Scops Owl is common and migratory. I have received eggs from Melres. Dr. Carvalho heard its note as early as March 3rd in 1879, but in 1884 not till April 7th.

131. BUBO IGNAVUS, Forst. "Bufo," "Ujo," Melres; "Corujão," Coimbra Museum.

The Eagle Owl is common on the precipices of the serras and rivers. It is to be seen at the fine gorge of Na. Senhora do Salto Aguiar de Sousa, about 12 miles from Oporto, where the river Sousa breaks through the Serra de Santa Justa. It breeds also on the Abitureira cliffs, on the north bank of the Douro, a short distance above Melres, and other suitable precipitous places. It nests very early in the year, and makes great havoc with partridges, hares, and rabbits.

132. ATHENE NOCTUA (Scop.). "Môcho."

The Little Owl is resident and the most abundant of the family in Portugal. On April 29th, 1862, I took a nest near Oporto with four eggs, catching the bird on the nest, and on the 21st of May, returning to look at the nest, which was in a hollow tree, there were three more eggs in it. The nest consisted of small dry twigs of heather, &c. This Owl frequents the mountains among the boulders, pine-woods, old oaks, and chestnut trees, and is also found on the olive-trees. I have seen them in winter, but it does not follow that they all remain. On the island of Cies, at the entrance to Vigo Bay, I saw one of these birds.

133. GYPS FULVUS (Gmel.). "Abutre."

The Griffon Vulture is found in various parts of the country, but it is rather scarce, except perhaps on the Serra do Suajo, where it breeds on the cliffs near the chapel of Na. Senhora do Penedo. In a private collection at Ovar I saw a fine specimen which had been shot in that neighbourhood—a straggler, no doubt, as marshy ground is not that on which one would expect to find Vultures. In the Museum at Lisbon there are specimens from the Ribatejo and Villa Viçosa, and several in the Coimbra Museum from the Alemtejo. Between Guardia and Bayona, just over the frontier in Galicia, many Vultures may be seen sailing about the stony mountains overlooking the coast.

134. VULTUR MONACHUS, Linn. "Pica osso," Coimbra Museum.

The Lisbon Museum possesses specimens of the Black Vulture from Collares and Benavente, and there are two in the Coimbra Museum.

135. NEOPHRON PERCNOPTERUS (Linn.). "Abutre."

In July 1869, I saw a live specimen which I was told had come from the Serra do Marão. The Egyptian Vulture is said to be common in the neighbourhood of Barca d'Alva, breeding on the precipitous banks of the river Douro near the Spanish frontier. I have seen flocks of what appeared to be this bird near the Guadiana, and Dr. Hans Gadow tells me that he saw two of its nests in the fine gorge of the Pulo do Lobo, near Serpa, on that river.

136. Circus æruginosus (Linn.). "Milhafre," Estarreja; "Minhôto," Aveiro; "Sapeiro," Alemtejo.

Abundant and resident on the marshes from Ovar to Aveiro and similar localities. The Marsh Harriers in this country show the usual variations in plumage, the white-shouldered form being very conspicuous while beating over the rush-beds on the flat grounds near Estarreja. I found a nest at Ovar and another near Aveiro, both built in clumps of tall reeds on the marshes and resting on the ground. The birds hunt very close to the ground, sometimes, in fact, they appear to beat the rushes with the tips of their long wings. As they are so sluggish in flight, I doubt their being able to catch the active Snipe, and they probably pick up sick and wounded birds, water-rats, frogs, and reptiles. In the Alemtejo this Harrier is called "Sapeiro" or "toad-eater."

137. Circus cyaneus (Linn.).

The only place where I have seen the Hen Harrier on several occasions is on the northern end of the lagoon near Ovar, where one was shot by a friend on the 2nd February, 1874. Dr. Carvalho tells me that this species nests on the marshes of Arzila and Foja, and that the Coimbra Museum received specimens from Montargil, Ribatejo. So far as I know, the Pallid Harrier, *C. swainsoni,* has not been found in this country.

138. Circus cineraceus (Mont.). "Aguia caçadeira," Lisbon Museum.

Of Montagu's Harrier there are in the Lisbon Museum specimens from Cintra, Evora, and another locality in the Alemtejo. Dr. Carvalho informs me that this species breeds on the marshes of Arzila and Foja near Monte Môr o Velho and that two young ones taken from the nest and other specimens were sent to the Coimbra Museum from Montargil, Ribatejo. I saw in the Coimbra Museum one of the nearly black specimens which are sometimes met with.

139. Buteo vulgaris, Leach. "Milhafre," "Minhôto," Oporto; "Milhafre d'aza redonda," Coimbra.

The Buzzard is resident and is the commonest of the larger Hawks in the neighbourhood of Oporto, as for instance in the pine-woods of Lavadós, Sto. André do Canidello, and Mattosinhos. I have seen it circling over the city of Oporto.

140. Aquila pennata (Gmel.). "Aguia pequena," Lisbon Museum.

There are specimens of the Booted Eagle in the Lisbon Museum from Evora and Redonho; the Coimbra Museum also possesses a specimen.

141. Aquila nævia.

Under this name the Coimbra Museum has a specimen of the Spotted Eagle, but whether it belongs to the larger or lesser form I do not know.

142. Aquila adalberti, L. Brehm.

In the grounds of the Crystal Palace, Oporto, there were formerly two specimens of the White-shouldered Eagle, the youngest of which I was informed came from the Serra de Estrella. In the Lisbon Museum there are specimens from Evora and Villa Viçosa, and there are several in various stages of plumage in the Coimbra Museum.

143. Aquila chrysaetus (Linn.). "Aguia real," Coimbra Museum.

The Golden Eagle is found in the wildest serras. In 1873 a live specimen was sent to my brother Alfred from the Serra do Marão, and he presented it to the Zoological Society of London. I have seen specimens from the Serra do Gerez, Serra d'Estrella, Cintra, and Mafra, and most of the numerous Eagles in the Serra do Gerez are probably of this species.

144. Circaetus gallicus (Gmel.). "Guincho da tainha," Coimbra Museum.

In the Crystal Palace of Oporto a specimen of the Short-toed Eagle was exhibited which had been obtained near Ponte do Lima; the Coimbra Museum possesses specimens from the Quinta da Foja and the Alemtejo; and I have a pair obtained at Abrantes, Ribatejo.

145. Nisaëtus fasciatus (Vieill.).

In the gardens of the Crystal Palace, Oporto, there are two fine live Bonelli's Eagles from the Serra do Marão, presented by the Visconde de Villar Allen. In the Coimbra Museum there are four specimens, and the same number in the Lisbon Museum.

146. Astur palumbarius (Linn.).

A solitary specimen of the Goshawk was sent to the Lisbon Museum from Evora.

147. Accipiter nisus (Linn.). "Gafanhôto," "Gavião," Oporto.

Common and resident in the north of Portugal. I have received eggs of the Sparrow Hawk from Candal, near Oporto, and from Castello de Paiva.

148. Milvus ictinus (Savigny). "Papa pintos," Anchora; "Minhôto," Valença; "Milhano," "Milhafre de rabo de bacalhau," Abrantes.

The Red Kite is common all over the country, especially in the south. It is abundant on the banks of the Tagus, but it is rarely seen in the immediate neighbourhood of Oporto, where its place is taken by the Buzzard.

149. Milvus migrans (Bodd.).

The Black Kite, which can be distinguished on the wing from the Red Kite, was seen by me on the 5th April, 1884, at Beja (Alemtejo), and again on the 7th of the same month on the Guadiana. There is a specimen from the Tagus in the Lisbon Museum; and it is probably not uncommon in the southern part of Portugal.

150. Elanus cæruleus (Desf.).

There are two specimens of the Black-winged Kite in the Lisbon Museum, sent from Salvaterra. Dr. Carvalho writes me that in January one was sent from Montargil (Alemtejo) to the Coimbra Museum, and another from the same locality on the 12th July. I saw a pair of what I believe were these birds near Tuy, a frontier town in Galicia, Spain.

151. PERNIS APIVORUS (Linn.).

Dr. Carvalho informs me that the Honey Buzzard was formerly represented in the Coimbra Museum, which no longer possesses a specimen.

152. FALCO PEREGRINUS, Tunstall.

My brother Alfred shot a Peregrine at Estarreja in the winter of 1870, when it was pursuing a Blackbird, which took refuge in a thicket of brambles. In the Lisbon Museum there are four specimens, and in the Coimbra Museum there are two from the Alemtejo.

153. FALCO SUBBUTEO, Linn. "Falcão tagarote," Coimbra Museum.

Of the Hobby I have seen examples shot at Leça de Palmeira near Oporto, and at Alpiarça near Santarem. The Coimbra Museum possesses many obtained in that neighbourhood, where, according to Dr. Carvalho, it is common during the summer.

154. FALCO ÆSALON, Tunstall.

I saw a Merlin in Oporto, which had been obtained in this country; and there are specimens in the Coimbra and Lisbon Museums.

155. FALCO TINNUNCULUS, Linn. "Gavião," Melres and Arcos de Val de Vez; "Milhafre," "Gafanhôto," Oporto; "Pilhafre," Aveiro; "Peneireiro," Penafiel and Berlengas Islands; "Francêlho," Alemtejo and Algarve.

The Kestrel is the commonest of the birds of prey, and is abundant all over Portugal, the old castles, quarries, and cliffs being its favourite nesting-places.

The Lesser Kestrel, *Falco cenchris,* is no doubt found in this country. I saw a flock of small Hawks at Beja in the month of April, which I very strongly suspect were of this species; they were flying about for a long time near the castle.

156. PANDION HALIAËTUS (Linn.). "Mujeiro," Melres; "Aguia pesqueira," "Aurifrisio," Coimbra Museum.

The boatmen near Melres tell me that a large bird of prey, which I think must be the Osprey, occasionally frequents the river Douro and catches grey mullet, whence its name of

"Mujeiro." A friend of mine tells me that when travelling on one occasion by train about the 20th February, 1883, on passing between Estarreja and Aveiro lagoon, an Eagle rose carrying in its claws a large fish, and settled on the edge of the water. When the train approached the bird tried to rise again, but the fish was so heavy that it could only drag it along. From his description I should judge that it was an Osprey. In the Lisbon Museum there is a specimen from the lake of Albufeira, in Portugal (not to be confounded with the large Spanish lagoon of that name near Valencia).

157. Phalacrocorax carbo (Linn.). "Corvo marinho," Portugal.

The Cormorant is very common in winter on the sea-coast. It is often to be seen on the river Douro, near its mouth. The Leixões rocks near Oporto are sometimes crowded with them. I have not seen this bird in the summer months; they generally appear from the middle of October. It was not nesting on Berlengas Island at the end of May, nor on Cies Island, Vigo Bay, in June; while, on the contrary, its near relative, *Phalacrocorax graculus*, was very common on these occasions, and I consider the Cormorant to be merely a winter visitant.

158. Phalacrocorax graculus (Linn.). "Corvo marinho," "Galhêta," Peniche.

I found numbers of the Shag nesting on Berlengas Island at the end of May, and also a few pairs on Cies Island, Vigo Bay, in June. In one of the nests there were two young birds greatly differing in age and size, a convenient arrangement where the parents have to provide fish for such voracious children.

159. Sula bassana (Linn.). "Alcatraz," Aveiro; "Mascato," Anchora, Vianna, Oporto, and Galicia; "Facão," Valbom fishermen, Oporto; "Ganso patôla," Coimbra Museum.

The Gannet is an autumn and winter visitant, arriving in August in small numbers, but the larger detachments do not come until October. Some remain till March.

[To be continued.]

XXXII.—*A few Notes on British Guiana and its Birds.*

By W. L. Sclater, B.A., F.Z.S.

My time, during the recent visit which I made to Demerara, was very short, and my attention was by no means specially devoted to its birds. Nevertheless, as I am told that some few notes on my journey may not be unacceptable to readers of 'The Ibis,' I have great pleasure in offering them herewith.

In the first place, I wish to point out how easy it is now-a-days, to any one who can spare three or four months for the purpose, to visit the tropics, and how much there is to be done in Natural History, even in what is supposed to be one of the best known of the English colonies.

The whole time of my absence from England last autumn and winter was under four months, during which I was only engaged in serious collecting for a period of about six weeks. Yet it will be seen on referring to the papers which some of my kind friends have prepared for the 'Proceedings of the Zoological Society,' upon the small collections of Mammals, Reptiles, and Worms which I was enabled to make, that, in each of these classes of animal life, forms new to science were obtained. I have also great hopes that among the Insects and Arachnids, which have not yet been examined, some objects of interest will be found.

With regard to the Birds, I must confess I did not exert myself seriously. Knowing the enormous series which that energetic collector, Mr. Henry Whitely, has of late years forwarded from British Guiana, and of which Mr. Salvin has given such an excellent account in this Journal, I thought it better to devote my scanty time to other objects.

I have therefore only a few general remarks to make upon this subject, and one or two notes to offer upon special points.

The colony of British Guiana forms, roughly speaking, an oblong slice cut out of the north-eastern sea-board of South America, about 200 miles in breadth, and extending some 400 miles into the interior. Of this area the sea-border, for an average breadth of some thirty miles, is perfectly flat, and in many cases below the level of the spring-tides, from the inroads of which the land is protected by artificial dams. Upon the immediate sea-frontage of this flat area all the cultivated land of British Guiana (consisting almost entirely of sugar-estates) is situated; behind the estates is either forest or marshy treeless ground, generally known in the colony as "wet savannah." Behind the flat sea-board, the land gradually rises until it culminates in Roraima and the other mountains which fringe the water-parting between the rivers of British Guiana and the tributaries of the Amazons and Orinoco. Here the country, at lower elevations and in the valleys adjoining the rivers, is covered with forest; but on the higher parts it consists of large tracts of open grassy plains, commonly known as "dry savannah."

My short travels in British Guiana were entirely confined to the sea-board region, except on one occasion when I penetrated into the interior as far as Bartica Grove, at the point of union of the Mazaruni and Essequibo Rivers, well known as one of Mr. Whitely's collecting-stations.

All the bird-collecting which I did in British Guiana took place at Maccasseema, the hospitable home of my friend Mr. E. F. im Thurn, whose kind invitation induced me to visit the colony.

Maccasseema is situated on the right bank of the Pomeroon River, about 30 miles from its mouth, and is about 60 miles from Georgetown. The house is built on the top of a sand-hill, which rises about 30 feet above the river. The forest which once covered the hill has been partially cleared, so as to leave space for the garden, which contains a large number of tropical plants and trees, and examples of upwards of sixty species of the order Palmaceæ, to which Mr. im Thurn has devoted special attention.

The garden, from which, however, it is needless to say, the collector's gun is rigorously excluded, is much resorted to by birds. Amongst those most commonly to be seen from the gallery which surrounds the house are perhaps the Blue Saki (*Tanagra episcopus*) and the Warroo (*Rhampho-*

cœlus jacapa), feeding on the fruits of some of the palm-trees; the "Qu'est-que-dit" (*Pitangus sulphuratus*), perched on the top of one of the trees, and looking out for insects; and occasional Humming-birds, of which the commonest species is *Topaza pella.* Other birds common in the garden are *Tanagra palmarum,* the "Calisi" of the Indians (*Certhiola chloropyga*), and the Sebi-sebi (*Chelidoptera tenebrosa*). Macaws and other small Parrots are often seen flying across the grounds, but rarely alight near the house. Mr. im Thurn has a large aviary full of captives, and a number of tame birds free round the house. Amongst the latter the most prominent are the Sun-bird (*Eurypyga helias*), the Warra-caba or Trumpeter (*Psophia crepitans*), and the Curri-curri or Scarlet Ibis (*Eudocimus ruber*). The cages are usually occupied by birds of various species, such as the Kessi-kessi (*Conurus solstitialis*), which are very noisy, especially early in the morning, Toucans (*Rhamphastos vitellinus*), the Maroudi (*Penelope greeyi*), and another species of the same genus (*P. cristata*), which is said to be confined to the Corentyne River and Orinoco country, and not to be found in the intervening districts. Besides these there were examples of *Urochroma purpurata, Caica melanocephala,* and other Parrots. The *Caica* is remarkable for its excessive friendliness and sociability. I brought a specimen of it home with me, which is certainly the tamest bird I have ever come across. In addition to the above mentioned, there was a Maam (*Tinamus subcristatus*) and a Hannaquoi (*Ortalis motmot*); this latter bird may be regarded as the Chanticleer of Demarara, for it rouses the sleepy wanderer most effectively by its far-resounding cry of "*hannaquoi*!" from which, of course, it derives its name.

It may be interesting to readers of 'The Ibis' to know that, there being no butcher within a reasonable distance of Maccasseema, the dinner-table is dependent for its supplies upon tinned meats and upon game brought in by the Indians, who pass most of their time in hunting, when they are not asleep in their hammocks. The principal birds obtained for food in this way were the Maam (*Tinamus subcris-*

tatus), which is remarkable for its large and savoury pectoral muscles, the Maroudi, a species of the genus *Penelope* (*P. greeyi*), the Powis (*Crax alector*), and the Hannaquoi (*Ortalis motmot*), besides occasional Pigeons, not to mention domestic fowls and Muscovy Ducks, of which the supplies were abundant, but not always of superior quality.

Amongst the birds met with during my numerous excursions into the bush in the vicinity of Maccasseema may be mentioned the following species, of all of which I brought home specimens :—

Cyphorinus musicus.
Euphonia cayana.
Myiarchus ferox.
Tyrannus melancholicus.
Myiozetetes cayennensis.
Pipra leucocilla.
Pipra gutturalis.
Thamnomanes glaucus.
Thamnophilus murinus.
Pithys rufigula.
Panyptila cayennensis.
Ceryle superciliosa.
Galbula albirostris.
Urogalba paradisea.
Leucopternis albicollis.
Asturina magnirostris.

I conclude with notes upon a few species.

1. Pithys rufigula.

This Ant Thrush, I was told, was commonly known as the Yackman-bird. It is said to be seen only in pursuit of the moving troops of Yackman-ants (*Eciton*, sp. inc.), which, as is stated, have no nest, but move in enormous masses through the forest.

The specimen of this bird which I procured was shot by one of the Indians in my presence, while I was engaged in watching a troop of these ants which were passing through the forest.

2. Chrysotis bodini.

I found a specimen of this Parrot alive in the aviary at Maccasseema, and on its death brought its skin home to my father for determination. It turned out to be rather a rare species, originally described from a living specimen in the Zoological Gardens at Berlin, and of which the exact locality was not certainly known.

Mr. im Thurn's bird was obtained by him from the Indians on the Barima River, which divides the colony of British Guiana from Venezuela, and is said to have been brought from the upper reaches of the same river. This Parrot is commonly known as the Toua-Toua, and is much prized by the Indians as being a rare bird and as being capable of becoming a very good talker.

3. LEUCOPTERNIS ALBICOLLIS.

I shot a specimen of this fine Buzzard at Seceeka, on the Ari-pia-caru, a tributary of the Pomeroon; it was sitting on a naked branch of a tree not far from the settlement, and allowed me to approach within a short distance of it.

4. OPISTHOCOMUS CRISTATUS.

So far as I could make out, the Hoatzin is only found in one district of British Guiana. This is in the eastern part of the colony, in the county of Berbice, where the bird is said to be very abundant on the Canje Creek, on which account it is locally known by the name of the "Canje Pheasant." The Canje Creek is a large tributary of the Berbice River, and its mouth is within a mile or two of New Amsterdam, the second town in the Colony, whence it would be readily accessible. The bird has also spread a little way up and down the Berbice River from the mouth of the Canje Creek. As is well known, the aroid shrub upon which the Canje Pheasant feeds (*Caladium esculentum*) gives its flesh a strong and disagreeable odour, whence comes the saying in the colony, "to stink as bad as a Canje Pheasant." The breeding-season of this bird would probably be after the rainy season in February or March; and had I been able to remain longer in Demerara, it was my intention to make a special expedition to the Canje River to get specimens of the eggs and young, in order to verify the American story of the "Quadrupedal Bird"*. As, however, I was not able to accomplish this desirable object, my father has asked Mr. Quelch, the Curator of the Georgetown Museum, to undertake the job, which he has kindly consented to do.

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* *Cf.* 'Ibis,' 1885, p. 118.

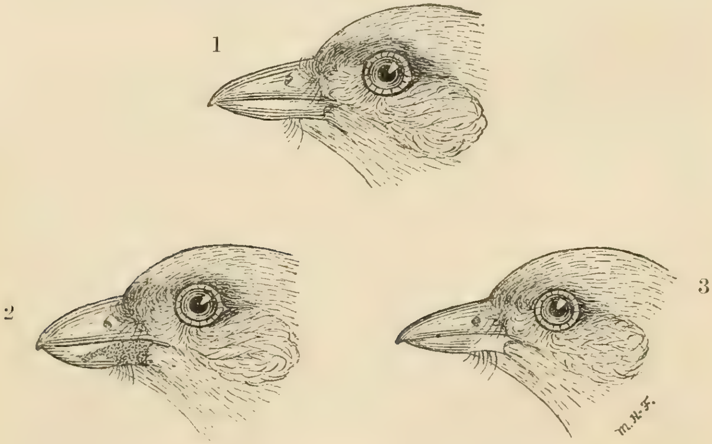
In conclusion, I must not omit to mention that the scientific names of the birds mentioned above have been supplied to me by my father, who has also been most kind in helping me to put together these few notes.

XXXIII.—*Remarks on the Species of the Genus* Cyclorhis.

By P. L. Sclater.

(Plate X.)

Having been obliged during the preparation of the first volume of 'Argentine Ornithology' to come to some conclusions as to the correct names of the two Argentine species of *Cyclorhis,* I have been led to examine carefully the series of specimens of this genus in the National Collection, which, since they were catalogued by Dr. Gadow (Cat. B. viii. pp. 316 *et seqq.*) in 1883, have received considerable additions from the collection of Messrs. Salvin and Godman and my own. As, with the aid of this increased number of specimens, I have come to rather different conclusions as to the best mode of arranging the species of the genus in natural order, I venture to put forward my views on this subject, and at the same time to point out the characters of what I believe to be a new and interesting member of the group.



1. Head of *C. guianensis.* 2. Do. *C. altirostris.* 3. Do. *C. nigrirostris.*

In different genera of birds, as is notorious, we find it convenient to seize upon various points of structure as the best guide to their arrangement. In *Cyclorhis* the form and colour of the short, compressed, Shrike-like bill appeared to me to be the most salient point. In the typical species allied to *C. guianensis* (fig. 1), and in six other nearly allied forms, the bill presents a nearly uniform appearance, and is further remarkable in carrying a large dark plumbeous spot at the base of the lower mandible. In a seventh species the bill is similar in structure, but there is no dark mark at the base of the mandible. In *Cyclorhis altirostris* (fig. 2) the structural features are carried to a greater extreme, the bill being still shorter and the upper mandible still more elevated. In *C. nigrirostris*, on the other hand (fig. 3), we find a less typical kind of beak, this organ being much less elevated, not so much compressed, and longer in proportion to its size.

I would therefore propose to arrange the ten species of *Cyclorhis* known to me as follows:—

A. Bill moderately thickened; upper mandible about one third thicker in vertical dimensions than the lower.	
a. Plumbeous spot at the base of the lower mandible.	
a′. Belly yellow	(1) *flaviventris*, p. 322.
b′. Belly white or pale cinereous.	
a″. Breast clear yellow.	
a‴. Crown greyish	(2) *flavipectus*, p. 322.
b‴. Crown green, like the back:	
occiput green	(3) *virenticeps*, p. 322.
occiput reddish	(4) *contrerasi*, p. 322.
b″. Breast greenish yellow:	
belly greyish	(5) *guianensis*, p. 323.
belly white	(6) *albiventris*, p. 323.
b. No plumbeous spot on mandible; bill uniform reddish	(7) *ochrocephala*, p. 323.
B. Bill much thickened; upper mandible nearly twice as thick as lower; plumbeous spot on lower mandible	(8) *altirostris*, p. 323.

C. Bill thinner, more subulate; upper mandible not nearly so much elevated:

bill black, spot at base of lower mandible rufous	(9) *nigrirostris*, p. 324.
whole bill black	(10) *atrirostris*, p. 324.

I will now offer a few remarks on these ten species.

1. Cyclorhis flaviventris, Lafr.

On this species consult Salv. et Godm. Biol. C.-Am., Aves, i. p. 211. The plumbeous bill-spot is, in some specimens, almost obsolete. This form extends over South Mexico, Yucatan, Guatemala, and Honduras. How far the recently described *C. insularis* (Ridgw. Proc. Biol. Soc. Wash. iii. p. 22), from the island of Cozumel, is different, it is impossible to say in the absence of specimens. I should also be disposed to question the necessity of separating *C. flaviventris yucatanensis*, Ridgw. (Pr. U.S. N. M. 1886, p. 519).

2. Cyclorhis flavipectus, Scl.

Descending the Central-American peninsula southwards, we find in Costa Rica and Veragua a second form of *Cyclorhis* with the belly more or less of an ochraceous white. This has been designated *C. subflavescens*; but we agree with the authors of the Biol. Centr.-Am. in considering that it cannot be kept apart from *C. flavipectus* of Colombia, Venezuela, and Trinidad. It may, perhaps, be treated as a subspecies (*C. flavipectus subflavescens*) by those who adopt trinomials. This seems also to have been Baird's view (Rev. Am. B. p. 388).

3. Cyclorhis virenticeps, Scl.

The green crown and well-marked dark chestnut superciliaries at once distinguish this species of Western Ecuador.

4. Cyclorhis contrerasi, Tacz. P. Z. S. 1879, p. 224, pl. xxi.

This form of Western Peru, of which there is now a single specimen in the National Collection, comes very near the last, but has the dark chestnut superciliaries widened and extended over nearly the whole summit of the head.

5. Cyclorhis guianensis (Gm.).

All the specimens of *Cyclorhis* I have seen from Guiana, Cayenne, and Upper and Lower Amazonia may be referred to *C. guianensis,* which has a grey belly, a greenish-yellow throat, and narrow red superciliaries.

6. Cyclorhis albiventris, Scl.

This form, which is prevalent in S.E. Brazil from Pernambuco to Bahia, comes in some cases, it must be admitted, very near to *C. guianensis,* but is recognizable by its white belly and the rufescent tinge of the crown, which in typical *C. guianensis* is of a pure grey. *C. cearensis,* Baird, Rev. A. B. p. 391, is stated to have a "decided buff tinge" on the belly, and cannot therefore, I think, be the same as *C. albiventris,* as Graf v. Berlepsch seems to regard it.

7. Cyclorhis ochrocephala, Tsch.

Tschudi's types of this form, which is at once distinguishable from the six previously noticed by the uniform reddish bill, without any trace of the dark plumbeous spot on the lower mandible, were from South Brazil, where the species is found in the provinces of Rio, San Paulo, and Rio Grande do Sul (*cf.* v. Berlepsch, Zeitschr. f. d. g. Orn. 1885, p. 116). After examining the series now in the British Museum, I have come to the conclusion that the Argentine species hitherto usually called (but erroneously, I believe) *C. viridis,* may be safely referred to it also. Some of the Argentine specimens can barely be distinguished from skins from Rio, though, as a general rule, the southern bird has a brighter yellow on the breast and not so much rufous tinge on the crown. *C. wiedi* of Pelzeln (Orn. Bras. p. 74), of Parana, is also barely separable.

8. Cyclorhis altirostris, Salv. Ibis, 1880, p. 3~~8~~2. 5/

As has been pointed out by Graf v. Berlepsch (Zeitschr. f. d. g. Orn. 1885, p. 116), this is probably the *Habia verde* of Azores, and, if so, ought to have the name "*viridis*" of Vieillot. But, as this is by no means certain, and a quite different species has been hitherto usually recognized under that name, it is much better to retain for the present bird the appropriate designation which Mr. Salvin has applied to it.

Mr. White's specimens from the Argentine Republic (*C. viridis,* White, P. Z. S. 1882, p. 595) belong to this species.

9. Cyclorhis nigrirostris, Lafr.

Of this very distinct Colombian species there are examples in the British Museum from Bogotá and Antioquia (*Salmon*).

10. Cyclorhis atrirostris, sp. nov. (Plate X.)

Suprà lætè viridis, superciliis latis castaneo mixtis et pileo reliquo hoc colore adumbrato: subtùs cinereus; pectore et lateribus viridi tinctis: subalaribus et remigum paginâ interiore sulphureo-flavis: rostro toto nigro, pedibus obscurè carneis. Long. tota 6, alæ 3·2, caudæ 2·5.

Hab. Æquatoria.

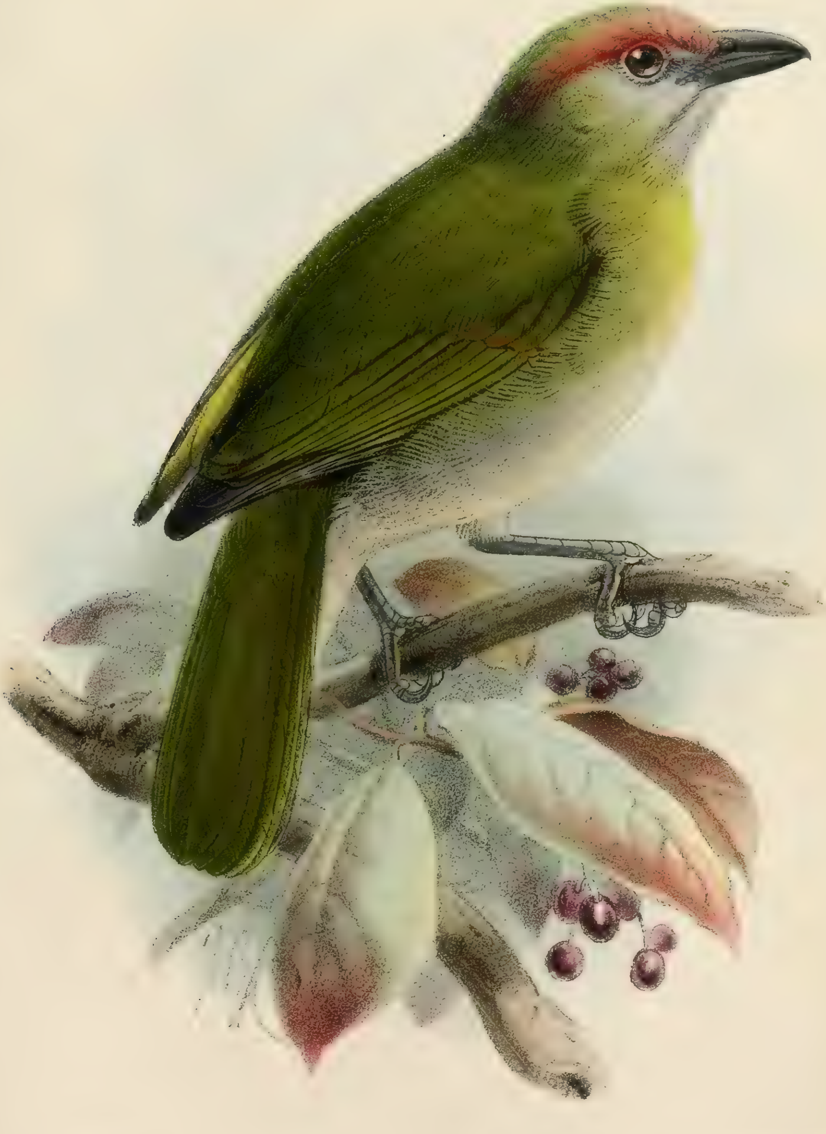
The single specimen of this bird in the British Museum, formerly in the collection of Messrs. Salvin and Godman, was obtained by Buckley in Ecuador. It is not quite mature, but appears to belong to a species closely allied to *C. nigrirostris,* and with the same form of bill, but without the light colour at the base of the lower mandible. The large and lengthened superciliaries also at once distinguish it from *C. nigrirostris,* in which they only extend just to the back of the eye.

XXXIV.—*Notes on a Collection of Birds from Kroonstad, in the Orange Free State.* By Edmond Symonds. (Communicated by J. H. Gurney.)

[Mr. Symonds has sent me specimens of the birds to which his notes refer (except where the reverse is mentioned), and I have carefully identified them.—J. H. G.]

1. Helotarsus ecaudatus (Daud.). Rufous-backed Bateleur Eagle.

There are always two or three pairs of these Eagles on a farm about six miles from Kroonstad, where there is thick bush; they are very shy and difficult to get at; the Boers say they do no harm to poultry or lambs.



[illegible] Hanhart imp.

CYCLORHIS [illegible]

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2. Circus macrurus (Gmel.). Pallid Harrier.

This Harrier is common throughout this district during our summer, but disappears in winter; they seem very partial to locusts, and all the specimens I have had contained locusts and grasshoppers in their crops.

3. Circus cineraceus (Mont.). Montagu's Harrier.

This species is rarer here than the preceding one.

4. Nisaëtus bellicosus (Daud.). Martial Hawk Eagle.

Male, immature; iris brown.

This specimen was found in the nest 20th September, 1885, and was kept alive till 15th February, 1886. The nest was in a mimosa tree about four miles from Kroonstad, and overhung the river; it was easily accessible and was formed of sticks, apparently from the mimosa trees; it must have measured from four to five feet in diameter. The young bird which the nest contained was all covered with white down. I watched the nest carefully for about six weeks to try to get the old birds, but in spite of all my attempts to hide myself within shot, and although there were many other trees and bushes close by, they always saw me and turned off to some other tree, where they sat and watched until I left; I even tried by moonlight, but never got a chance. On one occasion one of the old birds came so near that I could see a full-grown hare in its claws, but it swerved off just as I was going to shoot.

On the edge of the nest and on the ground close to it were skulls and bones of hares and meer-cats (*Suricata tetradactyla*).

When the young bird was almost ready to fly I took him home and my wife reared him; he sulked for a few days, and raw meat had to be pushed down his throat, but after about a week he took his food well, and eventually he became so far tame as to let my wife go into his cage (a good large one) and scratch his head, which he seemed to enjoy. When he was about to be fed he would erect his crest and half open his wings, giving vent to a low whistle; his eyes being large and most brilliant, he looked very grand and handsome in this position.

My wife left home for about a month, and when she returned the Eagle had forgotten her, and it was no longer safe to go into his cage; for on entering it he would slightly erect his crest, open his wings, throwing his weight upon one leg, and on attempting to touch him he would strike out with one foot with great rapidity.

Unfortunately the hot summer was too much for him, and notwithstanding all my efforts in keeping his place cool and in diminishing his supply of meat, he had a succession of apoplectic fits, which increased in frequency till, much to my regret, I had to put him out of his misery.

The old birds are still about here, but I had no time to look for their nest this year, and they did not use the old one: they are most destructive to young lambs, which they kill by coming down upon them with tremendous rapidity, and striking the formidable hind claw into the lamb, they rip it completely open, and then either eat it or carry it away; they are very difficult birds to get at to shoot, but the farmers sometimes manage to poison them, and say that strychnine is very fatal to them in very small doses.

5. BUTEO DESERTORUM (Daud.). Desert Buzzard.

This Buzzard is not uncommon about Kroonstad, but I have never noticed it during our winter months; it is said to be very destructive to chickens.

6. TINNUNCULUS RUPICOLA (Daud.). Lesser South-African Kestrel.

These Kestrels are plentiful here; a pair have built yearly for the last four or five years in an inaccessible situation on the Dutch church in Kroonstad.

7. TINNUNCULUS RUPICOLOIDES (Smith). Greater South-African Kestrel.

The specimen sent is the only one I have shot here, and I have but very seldom noticed any others.

8. Elanus cæruleus (Desf.). Black-shouldered Kite.

I have only seen one specimen here; it was shot in the month of August.

9. Melierax gabar (Daud.). Gabar Hawk.

I have not seen many of this species here.

10. Caprimulgus rufigena, Smith. Rufous-cheeked Nightjar.

This species is very common here, and I think perhaps remains through the winter, as I saw two in the latter part of June 1885.

11. Caprimulgus mossambicus, Peters. Mozambique Nightjar.

The specimen was shot in the willow trees near the river at Kroonstad.

[This is the most southern example of the species that has come under my notice.—J. H. G.]

12. Coracias garrula, Linn. European Roller.

This Roller is not uncommon in the bush by the river, but is very shy and difficult to get a shot at.

13. Coracias nævia, Daud. White-naped Roller.

The specimen sent was shot in the bush by the river about five miles from Kroonstad, and is the only one I have seen here. When first killed it had a beautiful shining appearance, like shot silk, somewhat of a green and blue colour, but this subsequently faded; the head is crested.

14. Corythornis cyanostigma (Rüpp.). Malachite-crested Kingfisher.

These Kingfishers are very common in summer on the banks of the Valsch River, but I have not seen them in winter.

15. Ceryle rudis (Linn.). Pied Kingfisher.

This species is also very common on the same river; the white on the throat shines like satin.

16. Ceryle maxima (Pall.). Great African Kingfisher.

Female, shot 17th August.

There is nearly always a pair of these Kingfishers on the river within the town of Kroonstad, and there is a large flat stone just in the water at the bathing-place, where they may be seen in the early morning killing crabs, or perhaps breaking their shells by beating them vigorously on the stone; the stomach of the specimen sent contained a whole crab with the shell broken in pieces, and the oviduct contained eggs that would have been laid in a few days.

17. UPUPA AFRICANA, Bechst. South-African Hoopoe.

This species builds here every year; it is very common and very tame.

18. RHINOPOMASTES CYANOMELAS (Vieill.). Scimitar-billed Wood Hoopoe.

These birds are rather plentiful in the bush along the river.

19. CHRYSOCOCCYX CUPREUS (Bodd.). Didric Cuckoo.

This Cuckoo is very common here, arriving in October and departing in March.

In the summer of 1884–85 some Sparrows built a nest and reared their young in a hole under the eaves of my house; they had laid for a second time, when one day my wife told me our Sparrows had been very noisy and in a great state over something, but we forgot it till on a subsequent day my wife again called my attention to a queer-looking bird in the Sparrow's nest which the Sparrows were feeding, and which, on getting up to the nest, I found to be a young Golden Cuckoo ready to fly.

[Mr. Symonds has sent this young Cuckoo, which was taken from the nest in the month of January; the upper portions of its plumage resemble those of the adult male, except that it is without any tinge of copper-colour on the back, and the white markings on the sides and centre of the pileum are less developed; the last-named white mark is, however, a variable character in the adult birds. On the under surface the white plumage is profusely intermingled with dark metallic-green spots, which on the flanks assume the form of transverse bars, and on the cheeks of longitudinal lines; all these markings, except those on the flanks, are absent in the adults.

The bill is orange-red in this nestling and in other very young specimens that I have seen, whilst in the adult birds it is black on the upper and dusky on the under mandible.

I have four young specimens but little older than that sent by Mr. Symonds, of which one (a male) closely resembles the Kroonstad specimen, but the other three, of which two are males and one a female, are more or less hepatic on the head, back, wings, and tail; these four specimens were dissected and sexed by Mr. Thomas Ayres.—J. H. G.]

20. COCCYSTES GLANDARIUS (Linn.). Great Spotted Cuckoo.

These Cuckoos are very common in Kroonstad in our summer, but are not seen in winter. In the early summer months the males seem to chase each other about, making a great chattering scolding sort of noise; this performance becomes less as Christmas gets nearer, and I have never heard it after the new year. They are very cunning birds, hiding themselves in the thickest part of a tree, to which they let you get close up and then slip away, taking good care that the tree is between you and them till they are a fair distance off.

[Of three specimens sent by Mr. Symonds, one was shot the 28th November, the others, one in December and one in January.—J. H. G.]

21. COCCYSTES JACOBINUS (Bodd.). Black-and-white Cuckoo.

The specimen sent and one other are all that I have seen of this species here.

22. POGONORHYNCHUS LEUCOMELAS (Dum.). Pied Barbet.

This species is fairly common here, but I do not send a specimen. The Black-collared Barbet (*P. torquatus*) I have never seen in the Free State; but I met with quite a flock of them on the Yokeskey River, Transvaal, about five hours south of Pretoria; they were particularly noisy.

23. Geocolaptes olivaceus (Lath.). Ground Woodpecker.

I have only seen these birds on one farm in this district, where the bush is extensive, the banks being high and of a kind of soil on which no grass grows. I observed quite a number of these Woodpeckers sitting on the mimosa trees, chattering and making a great noise.

24. Dendropicus cardinalis (Gmel.). Cardinal Woodpecker.

This species is common in the mimosa bush along the river.

25. Geocichla litsitsirupa (Smith). Ground-scraper Thrush.

This species is common here. I found its nest on a mimosa tree, built very much as the Missel Thrush builds at home.

26. Turdus olivaceus, Linn. Olivaceous Thrush.

These Thrushes are commonly seen hopping about under the trees in the bush.

27. Prinia flavicans (Bonn. & V.). Black-chested Grass Warbler.

These birds are very common in the gardens here; one pair builds yearly in a mulberry-tree a round oblong nest, with a dome on the top and an entrance at one side, of fine grass beautifully twisted and woven.

28. Nectarinia famosa (Linn.). Malachite Sun-bird.

These beautiful little birds are common in the town of Bethlehem (Orange Free State) all through the summer, but I have never seen them at Kroonstad. Bethlehem is much colder than this district, and as it is nearer the mountains (Wittebergen) it has perhaps a greater rainfall, and flowers may be more plentiful, but there is no bush near it.

29. Lanius minor (Gmel.). Lesser Grey Shrike.

The specimen sent is the only one I have seen here, an adult female, shot 24th March.

30. Lanius collaris, Linn. Fiskal Shrike.

This Shrike is common here.

31. Urolestes melanoleucus (Jard. & Selby). South-African Long-tailed Shrike.

This species is occasionally seen in pairs in the bush by the river.

32. Laniarius gutturalis (Müll.). Bacbakiri Bush Shrike.

A few pairs of these birds are always to be seen or heard about here, except in winter, when they disappear; in the dry years 1883, 1884, and 1885 they seemed to be very scarce.

33. Bradyornis silens (Shaw). Pied Wood Shrike.

This species is common all about the town of Kroonstad and the neighbouring bush.

34. Buchanga assimilis (Bechst.). African Drongo.

Isolated pairs of this species are seen here occasionally.

35. Lamprotornis australis, Smith. Burchell's Grakle.

These birds are very shy and cunning. I have occasionally seen a few pairs of them on a farm about nine miles from Kroonstad, where there is plenty of unfrequented bush near the river.

36. Lamprotornis phœnicopterus, Swains. Flame-shouldered Grakle.

This species is common here in pairs.

37. Spreo bicolor (Gmel.). White-rumped Grakle.

These birds are very numerous here.

[Mr. Symonds did not forward specimens of this and the preceding species.—J. H. G.]

38. Sporopipes squamifrons (Smith). Scutellated Finch.

These Finches are plentiful here, and in winter go in flocks with other *Estreldæ*; they become very tame in confinement.

39. Vidua principalis (Linn.). Dominican Widow-bird.

This is a common species all about here.

40. Coliuspasser procne (Bodd.). Long-tailed Widow-bird.

These birds are common in all this district and are very destructive on corn-lands.

41. Pyromelana oryx (Linn.). Southern Red Bishop-bird.

This is also a very common species here.

42. Quelea lathami (Smith). Latham's Weaver-bird.

These little birds seem to be particularly fond of the town of Kroonstad, which they frequent in large numbers. I have several in my aviary, and observe that in summer, when the males get their red colour about the head, the bills of the females turn yellow.

43. Amadina erythrocephala (Linn.). Red-headed Weaver-bird.

I saw these birds for the first time in May 1885, and had two in confinement, but they unfortunately died. I have never seen them in our summer months. I think a pair built on a Eucalyptus tree in Kroonstad in July 1886, as I saw them on several occasions going to a nest in the tree with grass and feathers, and was quite close enough to see them plainly. I did not disturb them, hoping to get the young ones, but I left home for a few weeks, and on my return the birds were gone; the nest had droppings &c. round it and the usual signs of having been occupied by young birds.

44. Hyphantornis mariquensis (Smith). Capricorn Weaver-bird.

The nests of these Weaver-birds are to be found on nearly every tree overhanging the river; their eggs vary greatly from cream-colour not spotted to greenish thickly spotted with reddish brown.

[The specimens sent by Mr. Symonds appear to me to belong to the larger and duller-coloured race of *H. velatus*, which should probably be referred to *Ploceus mariquensis* of Smith, as to which see Captain Shelley's remarks at p. 31 of the present volume.—J. H. G.]

45. Estrelda astrild (Linn.). Common Waxbill.

This species is very common here; the stripe over the eye is a most brilliant vermilion during life.

46. Uræginthus granatinus (Linn.). Granadine Waxbill.

These beautiful birds I have only seen in the winter, when they occur in flocks with other Waxbills, feeding on seeds &c. along the river-banks.

The violet on the cheeks is most brilliant and bright during life, flashing in the sun if seen in a proper light.

47. Crithagra ictera (Vieill.). Golden-rumped Seed-eaters.

These birds are generally found in flocks in the winter with the Waxbills.

48. Macronyx capensis (Linn.). Sentinel Pipit.

These Pipits are very plentiful all over this district; young pointers will frequently 'stand' them.

49. Œna capensis (Linn.). Long-tailed African Dove.

These Doves are very common all about the town of Kroonstad and the river. I have frequently tried to catch them alive, but although I am fairly successful with other birds, these were too cunning; no sort of live-trap that I know of will catch them, though they walk round and round and investigate it closely. They nest here, if the few sticks they put together can be called a nest.

50. Pterocles namaqua, Gmel. Namaqua Sand Grouse.

These birds appear in flocks in the autumn, when the mealie-lands are cleared. The pair sent I shot together on 30th September: I think they had a nest, though I could not find it. In November I saw a pair and a young bird running with them.

51. Coturnix communis, Bonn. European Quail.

These Quails are always to be found about the mealie-lands in April, and occasionally one or two are found at other times of the year, but they are then less numerous.

52. Turnix lepurana (Smith). Kurrichane Hemipode.

These birds are also found in the mealie-lands in April, when the mealies are getting ripe, but I have never seen them at any other season; they are about as numerous as the Quails, and both species afford very good sport, but require a good dog to find them, as they lie very close.

53. Cursorius rufus, Gould. Burchell's Courser.

This Courser is very common here.

[Mr. Symonds did not send a specimen of this species.—J. H. G.]

54. Cursorius bicinctus, Temm. South-African Double-banded Courser.

This species is also very common; I have found the remains of ants in the stomach.

55. Ægialitis tricollaris (Vieill.). Three-collared Sand Plover.

These little birds are very numerous here, especially near water. On 25th October, 1885, I found a nest just on the side of the road, whilst driving, by noticing a Plover twisting round and scratching with great rapidity. My boy told me that it had a nest, but although I got out of the cart at once and kept my eye on the spot, it was some time before I really saw the nest, if a slight depression in the bare ground can be so called, though I was staring hard at it all the time. The two eggs which it contained were completely covered with dried droppings, little stones, sand, &c., which I had to remove before I could see them. I conclude the old bird was concealing the eggs by covering them with dry dung &c., and that this was the reason of the vigorous scratching.

56. Porphyrio smaragdonotus, Temm. Green-backed Porphyrio.

I think these birds are more plentiful than is generally supposed in the large grass-pans in the high veldt, but they are not easily seen, and if seen are difficult to get unless killed on the spot; they lie close and seem to creep away, never to be seen again.

57. Botaurus stellaris. Common Bittern.

The specimen sent is the first I have seen in this district.

58. Ardea cinerea, Linn. Common Heron.

These Herons are very common all over the district.

59. Herodias alba (Linn.). Great White Egret.

60. Herodias intermedia (Wagl.). Short-billed White Egret.

Both this and the preceding species are decidedly scarce here; they are only found about the pans in very wet seasons.

61. Ibis æthiopica, Lath. Sacred Ibis.

This species is always seen in certain pans and vleys, sometimes in small flocks, but nine is the largest number I have seen here together.

62. Hydrochelidon hybrida (Pall.). Whiskered Tern.

Four of these Terns were seen in the month of December 1884 at a large reed-pan near Kroonstad, of which the specimen sent is one. On two other occasions I have seen the same species on other pans, but think it must be scarce here. I know nothing of its habits further than that it incessantly flies round and skims over the water.

[The specimen sent is an adult bird in full breeding-dress.—J. H. G.]

63. Hydrochelidon leucoptera (Schinz). White-winged Black Tern.

The specimen sent was shot at the same time as that of the preceding species; it is very much more plentiful than the Whiskered Tern, which it resembles in its habits, though not so rapid in its flight.

[The specimen sent is in immature plumage.—J. H. G.]

64. Casarca cana. South-African Shell Duck.

These Ducks are not plentiful here; they appear to nest on the ground at some distance from the pans, and bring their young down to the water; the Boers catch them when quite young, in the veldt, and rear them, sometimes cutting their wings and keeping them tame about the house, so that they swim on the dams with the tame Ducks and Geese.

65. Thalassornis leuconota, Smith. White-backed Duck.

The specimen sent was shot on a pan in this district; I have only seen three or four specimens of this species, though I have done a good deal of Duck-shooting here.

66. Plotus levaillanti, Licht. African Darter.

There are always one or two Darters about the river close to Kroonstad, but I have only seen them singly, never in pairs; they sit on old dead stumps of trees over the water and dive with great ease, coming up with their heads just out of the water. For some reason or other they are very difficult to kill. From the specimen sent I took a freshly-killed yellow fish 9¾ inches in length.

[A few years since the Zoological Society of London possessed a living specimen of *Plotus levaillanti*, and also examples of *P. anhinga* and of *P. melanogaster*. Mr. Bartlett has been so good as to inform me that all three species, whilst under his observation, captured the living fishes on which they fed in the same manner, and that a peculiar one: the Darter always transfixed the fish on its sharp under mandible, from which it was subsequently tossed off and swallowed; a somewhat strenuous jerk was required to throw the fish off from the lower mandible which had transfixed it, owing to the tomiæ of both mandibles being finely serrated.—J. H. G.]

XXXV.—*Notes on the Birds of Natal and adjoining parts of South Africa.* By Henry Seebohm.

Although Natal is a very small country it embraces a wide range of climate, from the almost tropical coast, heated by the warm current of the Indian Ocean (which flows steadily from the equator), up to the temperate regions of the mountain valleys, five or six thousand feet above the level of the sea, at the foot of the Drakenberg range, which attain an elevation of eight to ten thousand feet. The character of the country varies also in other ways. The sugar-canes of Durban, the mealies (Indian corn) of Maritzberg, the bush of the Kartloof, the veldt of Hanover and York, and the thorn (mimosa) country of Colenso have each their peculiar bird-life, so that the avifauna of Natal is a very varied one, rich in species as well as in individuals. To attempt to obtain more than the merest passing glimpse of so great a number of species of birds in so short a time as one month would be of course impossible. Moreover the month of March, during which I was in Nátal, is unquestionably the least favourable one in the whole year for the study of the resident birds. In Natal, March is the beginning of autumn, most birds are in full moult, skulking in the bush, and, for the most part, silent. My chief object in visiting Natal was, not to study the resident birds, but to see some of our British species in their winter home, and to try and settle one or two vexed questions relating to the moulting and migration of British birds.

The statement that most, if not all, our species of Waders (Plovers, Sandpipers, and Snipes) moult their primaries in spring as well as in autumn has been questioned by so many practical as well as theoretical ornithologists, that I determined to visit some winter resort of these birds, and obtain irrefutable evidence that Naumann knew what he was talking about when he stated, as an unquestionable fact, that the Limicolæ moult their primaries in spring as well as in autumn. I chose the Bay of Durban as the most convenient locality where British birds abound in winter. The coast of South Africa is very steep, the sea is often rough, and the waves of the Indian Ocean dash against the barren sand-hills which skirt the shore with so much violence that few or no birds are to be seen from the deck of the coasters, except Petrels and now and then a Gull or a Gannet. On the other hand, the lagoons at the mouths of the rivers swarm with birds. The sand-hills protect them from the violence of the winds; and the periodical floods (for one of the features of South-African climate is that it never rains but it pours) bring down abundance of animal and vegetable food, which the birds can pick up at their leisure on the mud-flats left by the falling tide. As I expected, I found the Bay of Durban swarming with British birds,—Curlew, Whimbrel, Greenshank, Grey Plover, Ring Dotterel, Wood Sandpiper, Common Sandpiper, and Sanderling. The only resident Waders were the African Sand Plover (*Charadrius marginatus*), which was very common, the Three-banded Sand Plover (*Charadrius tricollaris*), which was rare, and the Vermiculated Stone-Curlew (*Œdicnemus vermiculatus*), of which we met with a small party on the mud-flats at the mouth of the Umgeni river, north of Durban. The latter bird is interesting as being an *Œdicnemus* with the habits of an *Esacus*; I ascertained from resident sportsmen that it does not frequent the dry veldt, like its congener *Œ. capensis*, but is always found on the banks of rivers or lagoons.

None of these birds were very shy, and we had no difficulty in making very fair bags. Half the birds we shot had evidently just finished moulting, every quill having a gloss upon it like the bloom on a plum or the scales on the wing of a newly-hatched moth. The other half consisted of birds in every intermediate stage between a partial and a complete moult. The new quills were splendidly rich in colour; a pair, one on each side, were half-grown, and the rest were faded to a uniform rusty brown, and generally ragged and torn to little more than shreds of their former perfection. A day in March in the Bay of Durban must convince the most sceptical that Plovers and Sandpipers moult their primaries in spring as well as in autumn.

The other question which I was anxious to settle was the truth of the statement that, as a general rule, amongst regular migrants, the further north a bird goes to breed, the further south it goes to winter. As regards species this is very easy to prove; but as regards individuals, the statement has often been questioned. The Swallow (*Hirundo rustica*) is one of those conspicuous birds which is easily identified, and which is so numerous that its absence is quickly detected. Unfortunately we have no reliable records of the departure of Swallows from Central Africa; but when I was in Natal during the last week in March, Swallows were swarming in countless thousands on the coarse marine herbage on the sand-hills between the sea and the lagoons at the mouth of the Umgeni river. Most of the adults were in splendid glossy blue plumage, having just completed their moult, but most of the birds of the year had only moulted about half their quills, and would probably not be in a condition to migrate for at least a fortnight.

Our Swallows arrive in North Africa very early, during the last half of February, in Southern Europe during the first half of March, but in Central Europe not until the last half of March. It is perfectly certain that the Natal Swallows, if they leave during the first half of April, even allowing them only a few days in which to accomplish a journey of five or six thousand miles, must go to some part of North Europe or to North-west Asia, since the Swallows which breed further south have arrived at their breeding-grounds before the South African birds have left their winter-quarters. So far as it goes, this evidence is conclusive that, in the case of the Palæarctic Swallow, the individuals which go furthest north to breed go furthest south to winter.

Our Swallow, as probably every other species of Hirundinidæ, only moults once in the year. After having migrated six or seven thousand miles to their breeding-grounds, spent nearly six months in the stormy summer of Northern Europe, again migrated six or seven thousand miles back to their winter-quarters, and spent another six months during the rainy season of Natal, it is a wonder that the poor birds have any feathers left. Some of the birds which I shot had been in a lamentable condition; the old feathers that still remained had faded to a rusty brown and were worn to shreds. The plumage of the young birds though they had only run the gauntlet of one journey and one summer, is so much more tender than that of adults, that they were in the worst condition; the old feathers were no better than rusty rags.

The most interesting fact in connection with this single moult of the Swallows is, that it takes place in March instead of September. The natural inference to be drawn from such a circumstance is, that the Swallows belong to the southern hemisphere; and have only comparatively recently (probably in post-glacial times) emigrated to the Palæarctic and Nearctic Regions. This theory is confirmed by a glance at their geographical distribution. The genus *Hirundo*, as restricted by Sharpe in the 'Catalogue of Birds,' contains 27 species, of which 16 breed only in the Ethiopian Region, 2 in both the Ethiopian and Oriental Regions, 2 only in the Oriental Region, 1 in both the Oriental and Palæarctic Regions, 1 in both the Oriental and Australian Regions, 2 only in the Australian Region, 2 only in the Neotropical Region, and the remaining 1 in the Nearctic, Palæarctic, and Ethiopian Regions. Of the 11 genera recognized by the same author, *Hirundo* is the only one which is cosmopolitan in its range; 2 are confined to the Ethiopian, and 1 to each of the Australian and Neotropical Regions, whilst no genus is confined to the Palæarctic or Nearctic Regions. The evidence that the Swallows had an Antarctic origin seems to be conclusive.

By far the most interesting of the Swallows that came under my notice in Natal was the Blue Swallow, *Hirundo atrocærulea*. A few pairs of these charming little birds were almost always to be seen, hawking diligently for flies over a small field which led from the garden of my friend Mr. Mark Hutchinson's house down to a little stream that flowed at the foot of the bush. Graham Hutchinson told me that they were seldom seen in the open veldt, and always chose sheltered nooks near bush and water. Early in the morning they often used to perch on the wire fence that enclosed the garden. He told me that they were never seen in winter. They associated freely with the other species, but were often alone.

Little or nothing has been written of the migrations of birds in the southern hemisphere, but it is almost as important a fact in the history of the birds of Natal as in that of British birds, although the difference in the geographical relations of the two countries modifies the details in many ways. It is a remarkable fact that whilst there are very many birds breeding in the northern hemisphere and wintering in the southern, it is not known that any land-bird breeds in the southern hemisphere and habitually winters in the northern. It seems probable that most of the accidental visits of southern species of land-birds to the northern hemisphere which have been from time to time recorded are of doubtful authenticity; and amongst sea-birds it is confined to one or two species of Petrel, of which it is not unlikely that undiscovered breeding-grounds exist in the northern hemisphere. One cause of this apparent anomaly may be the difference in the distribution of the land. North of the British Islands and a corresponding latitude on the continent of Europe and Asia is an Arctic Region which is the breeding-ground of great numbers of migratory birds. Many of these winter in our islands, whilst others are regular spring and autumn visitors, passing along our coasts on migration from their Arctic breeding-grounds to their winter-quarters in Southern Europe or Africa. In the southern hemisphere there are no Antarctic breeding-grounds whence similar migrants could visit Natal. No part of South Africa is cold enough to be a breeding-ground of Arctic birds, and the land at the Antarctic pole is too cold for them. The natural consequence of this state of things is, that in South Africa there are no migrants from the Antarctic region, either in winter, or passing through in spring and autumn to winter further north. To compensate for the absence of such an important section of migratory birds, Natal and other parts of South Africa are visited every year by an equally important section of migratory birds, a migration which has no parallel in the northern hemisphere.

The fact that in the Antarctic region there is no land suitable for the breeding of birds, except a few species of Penguins and Petrels, is the cause of the apparently anomalous circumstance that the northern hemisphere is only accidentally visited by migratory birds whose breeding-grounds are in the southern hemisphere. South Africa is, however, visited by numerous regular migrants from the northern hemisphere, birds which spend half the year, from September to March, in the summer of the southern hemisphere, surrounded by other species, some of them congeneric, busily engaged in the duties of incubation, but themselves looking on with absolute indifference. In addition to the Plovers and Sandpipers already mentioned, and the Swallow, many other species, such as the Swift (*Cypselus apus*), the Willow Wren (*Phylloscopus trochilus*), the Sedge Warbler (*Acrocephalus phragmitis*), the Great Sedge Warbler (*Acrocephalus turdoides*), which breed in Northern Europe and North-western Asia, cross the tropics to enjoy a second summer in the Transvaal, Natal, and other parts of South Africa. The fact that these birds which spend the summer in Europe are found in South Africa during the South-African breeding-season, has given rise to the legend that some birds breed twice in the year —in June in Europe, and in December in South Africa. It is very difficult to prove a negative, but when the evidenec of these alleged cases of double breeding is carefully examined, it always proves to be unsatisfactory. Andersson, in his 'Birds of Damara-Land,' remarks of *Hirundo rustica* that it breeds in that country; but there can be little doubt that the Swallow which he supposed to be our species was the White-throated Swallow (*Hirundo albigularis*), which he does not mention, and which he probably mistook for the female of our bird. His further remark that in consequence of the scarcity of houses it breeds in rocks and *trees*, adds still more doubt to the accuracy of his observations. I have seen the Swallow breeding under overhanging cliffs in the Dobrudscha, but I never heard of its having been found nesting in a tree. Nordmann's Pratincole (*Glareola melanoptera*) is also stated, on the authority of Mrs. Barber, to breed in South Africa; but as this bird and the Wattled Starling (*Dilophus carunculatus*) are both known in that country as the Small Locust-bird, it seems very probable that the two species have been confused together either by Mrs. Barber or by Mr. Layard. It is a significant fact that the Layard collection of eggs in the Museum at Cape Town, which is a very good one, reflecting great credit on the energy of the collector, does not profess to contain an African egg of the Pratincole. The Quail

(*Coturnix communis*) certainly does breed in South Africa; but this bird is a partial resident in Natal and the Cape Colony, its numbers being probably increased by migratory but non-breeding birds in spring. There is no reason to suppose that the breeding-area of its distribution is discontinuous, and, in the absence of any evidence to the contrary, it is fair to assume that it breeds throughout Africa, as the Heron, several species of Egret, the Black-winged Stilt, and the Avocet are known to do. It is possible that there may be species of birds breeding both in Europe and in South Africa, but wintering only in Central Africa; in which case we should find the curious anomaly of a species of bird found all the year round in Tropical Africa, but not breeding there, half the individuals being absent from March to September, in order to breed in the northern hemisphere, and the other half being absent from September to March, in order to breed in the southern hemisphere; but before such a theory could be accepted it must be supported by facts which are not open to suspicion.

The winters in South Africa are very much milder than those of England, they approach much nearer in climate to those of the Riviera; snow is almost unknown, but in many places the nights are cold, and as in South Europe, so in Natal, many birds, for the most part insect-feeding species, leave in autumn for warmer climes. Amongst these, several species of Swallow (*Hirundo albigularis, H. semirufa, H. cucullata*), most of the Cuckoos, and some of the Warblers are conspicuous examples.

It is rather remarkable that the delicate-looking Sunbirds, which vie with the Humming-birds in the brilliancy and metallic lustre of their plumage, are able to brave the winters of Natal without migrating. *Cotyle paludicola,* the representative of our Sand Martin, and *Cotyle cincta,* the representative of the South-European Rock Martin, must also be included amongst the residents.

There is in the British Islands a great deal of local wandering amongst birds, and in Natal this internal migration is even more conspicuous. The climate of South Africa varies in different localities. The rainy season is, as a rule, during summer, but there is a strip of country near the coast, extending from Cape Town to Knysna, where the rain falls in winter, and between the two districts is a belt of country of uncertain rainfall, where in some years it rains every month, and in others little or no rain falls for a whole year. These changes of climate necessitate great changes of residence amongst the bird-population. Some birds feed principally on grasshoppers, and migrate far and wide in search of large erratic flights of these insects. Man has been described as a cooking animal, but Nordmann's Pratincole also much prefers to eat its locusts cooked, and may be said to spend its time in migrating in enormous flocks in search of roasted grasshoppers. The grass in Natal is of such rank growth, that large patches of veldt are burnt off every year to clear the ground; and then the Pratincole, the Lapwing (*Vanellus melanopterus*), and the Courser (*Cursorius rufus*) are always on the look-out for these grass-fires, feeding eagerly upon the scorched insects left in their wake. For days together flights of Pratincoles pass over the country, perhaps not to be seen again for weeks, or even months. The flights of ants are also a source of great attraction to some birds. For about a week early in March, a flock of perhaps three hundred Eastern Red-legged Falcons (*Falco amurensis*) frequented the farm in Natal where I was stopping. They spent the day hawking like Swallows at a great height in the air, and at night they roosted all together on the naked branches of some tall trees in the bush. It is very remarkable that these birds are not known to breed west of Irkutsk, their summer-quarters being apparently confined to the valley of the Amoor in South-eastern Siberia, though their winter-range extends from the eastern provinces of the Cape Colony through India to China.

The South-African Snipe (*Scolopax æquatorialis*) is only known from South Africa, where it is a resident, breeding all over the country in the vleys or marshes. In exceptionally dry seasons many of these vleys dry up, and the ground becomes too hard to be probed by the soft bills of the

Snipe in search of food. The Snipe are consequently obliged to migrate for a season to vleys where there is still abundance of moisture, and thus it often happens that large bags are obtained where a week before only a few scattered pairs could be found.

One of the most conspicuous birds in Natal, during the month I spent in the country, was the White Stork (*Ciconia alba*). In riding across the veldt it was seldom that one or two pairs were not visible, and sometimes large flocks collected together to roost on the bare branches of some venerable tree in the bush. No bird could be better known to the colonists, amongst whom it is familiar as the Great Locust-bird. But the only instance that I heard (and I made many inquiries) of the breeding of this bird in Natal, was that of a pair which once bred on the ground nearly twenty years ago. Even supposing the identification of the species to have been correct, the fact of the nest being on the ground in a country where houses, rocks, and trees abound is presumptive evidence that the bird which made the nest was unable to fly, and persuaded its mate to remain with it in their winter-quarters.

Few points connected with the ornithology of South Africa have given rise to greater difference of opinion than the various plumages which characterize the Mountain Chats (*Saxicola monticola* and *Saxicola leucomelæna*). These birds are by no means uncommon on the highlands of Natal, wherever the ground is strewn with rocky boulders. So far as I was able to ascertain, I think we may accept the statement of Messrs. Butler, Feilden, and Reid ('Ibis,' 1883, p. 332), that the females are, like the birds of the year of both sexes, brown all over, except the rump, tail, and tail-coverts, which vary very little either with age or sex. This, of course, implies that some of the grey birds in the National Collection, obtained by Andersson in Damara-Land, are incorrectly sexed. One more statement will probably be admitted by everyone who has watched these birds amongst the rocks, namely, that whilst the females vary little or not at all, the males differ from each other in a remarkable manner. The earlier writers on South-African birds regarded each of these various forms as distinct species. When I wrote the fifth volume of the 'Catalogue of Birds' in the British Museum, I ventured to hazard the hypothesis that there were only two species, and that the intermediate forms were merely crosses between the extremes. The conclusion that Messrs. Butler, Feilden, and Reid came to, was that the variations are due to age, and that the brown birds first grow black, and then (when they are six years old) grey. On the underparts, below the breast, the change is still more extraordinary. It is alleged that the brown changes first to white, then to black, afterwards to grey, and finally to whitish grey, when the bird is presumably seven or eight years old. It is quite possible that this theory may be true, but I am unable to discover a shred of evidence in its favour. It appears to me to be a wild hypothesis, unsupported even by analogy, and if true, is a unique fact in ornithology. Now the theory that these variations are the result of the interbreeding of two (or now that the grey birds are proved to be males, of three or more) imperfectly segregated forms, is supported by considerable evidence. The analogy of the intermediate forms between *Saxicola picata* and *S. capistrata*, between *Monticola cyanus* and *M. solitaria*, to say nothing of the distantly allied Crows (*Corvus cornix* and *C. corone*), is very suggestive, and an examination of a series of each confirms the theory of interbreeding. It is impossible, in either the Crows or the Mountain Chats, to arrange the intermediate forms in a satisfactory series. Sometimes the influence of the male is apparently strongest on the upper parts, and sometimes on the lower parts. It is difficult to imagine that sometimes the upper parts age first, and sometimes the lower parts. The facts that in the adult birds of *S. leucopyga* the crown is white, but in birds of the year black, and that in the adult birds of *S. lugubris* the belly is black, but in birds of the year white, suggest that in the Mountain Chats these parts may vary in colour with age.

It seems to me that this vexed question is as far as ever from being solved. All we can say is that the males vary very much. Messrs. Butler, Feilden, and Reid make the variations nine in number, but it is just as logical to make them nineteen. Some of these variations are unquestionably due to age, but others appear to be so erratic that the only hypothesis which will reconcile them is that of interbreeding. How otherwise can you explain the fact that birds with a pure white crown are apparently confined to the extreme west of South Africa, and that the white crown is found associated both with black and grey backs? Until a bird has been seen to moult from one plumage to the other, I submit that the theory that all the variations are due to age is pure hypothesis.

The extraordinary influence of the Gulf-stream upon the climate of the British Islands naturally prepares the English traveller to find similar effects produced by oceanic currents in other parts of the world. A notable example of this climatic variation is within easy reach of the visitor to Cape Town. A cold current comes down from the Antarctic ice, and passes along the west coast of Africa, materially assisting the progress of homeward-bound ships, but lowering the temperature of the water in Table Bay so much as to make bathing on the coast near Cape Town practically impossible. A few hours drive across the isthmus, through a charming country, full of vineyards and avenues of oak-trees, leads to False Bay, where the water is so warm that many Cape Town families migrate thither during the heat of summer to enjoy the sea-bathing and the country air. A warm current from the equatorial regions of the Indian Ocean flows down the east coast of Africa, and its influence extends as far as the Cape of Good Hope. The result is that the east and south coasts enjoy an almost tropical climate and display a more or less tropical vegetation. For some miles inland the country is well wooded. Near Knysna there are extensive forests, where wild elephants still roam. But the country rises rapidly from the coast, and for some hours the railway from Port Elizabeth passes through an ostrich-farming district. Nothing could be less like an English landscape than this part of South Africa. The hills are rugged, rocky and bare; the valleys are full of a rank tropical vegetation, of which the cactus and a palm-like aloe are the most conspicuous trees; and when fenced ground is reached the enclosure is often found to contain a herd of ostriches instead of cattle. The landscape can only be described as "all that there is of most un-English." Inland from Cape Town the scenery is different. The cold current from the south removes nearly all trace of tropical vegetation, vineyards soon give place to corn-fields, and you pass through almost the only wheat district in the colony. North of these limits lies the Karroo. From Cradock in the east, up to Kimberley in the north, and then down to Worcester in the west, the railway passes through a country, compared with which a Siberian tundra is a paradise. I have never seen anything so hopelessly dreary as the Karroo. Every square yard is indelibly stamped with the two-fold signs of deluge and drought. The country is walled in by naked hills, generally table-topped, from which every trace of vegetation and soil has been washed away by deluges of rain, leaving only a heap of disintegrating stones, tied together by layers of hard rock. The undulating valleys are bare mud or earth, thinly sprinkled over with dwarf herbs and bushes, seamed here and there with dry watercourses, and torn up in the valleys with deep torrent beds which tell of floods carrying everything before them. But sometimes months and months pass by without a drop of rain, and what vegetation has been spared by the torrents of rain is destroyed by the scorching rays of a burning African sun. And yet this country produces a great deal of wool and mohair, though farming has been reduced to the conditions of a gambling transaction. There are certain semi-saline plants or little bushes growing upon the Karroo, which sheep and goats eat greedily, upon which they fatten rapidly, and multiply prodigiously, and which appear to be a panacea to all the ills that sheep are heir to. The consequence is, that when there is plenty of rain the farmers become rapidly rich, to be reduced to the verge of ruin if a long period of drought sets in. In times of prosperity the farmer has little or no inducement to do anything but enjoy his abundance; in times of adversity there is little or nothing that he can do to ward off impending ruin. Therefore he becomes a fatalist, stolid indolence being the prevailing feature in his character: his motto is never to do anything to-day that can possibly be done to-morrow. He grows a few vegetables round his homestead, just as much as he can water from his well, if need be. That life under such circumstances should be deemed to be worth living is almost inconceivable. How bitter must have been the hate of English misrule that induced the stolid Boer to trek away to such a desolate country!

But, dreary as it looks, the Karroo is by no means destitute of bird-life. Larks and Pipits abound on the open plain, and near the houses a large Sand Martin, *Cotyle fuligula*, is common. Bustards and Coursers of various species are still found, but the Karroo bird *par excellence*, the Ostrich, has been practically exterminated, except as a domesticated species.

Ostrich-farming has had many vicissitudes. The price of a pair of birds, when the rage for Ostrich-farming reached its culminating point, went up to £250, but has now fallen as low as £10. Each bird produces a crop of feathers every July or August. At the highest price the crop sold for about £17, now it only averages about £2 10*s.*; nevertheless, I was informed that, with good management, Ostrich-farming still pays well. The feathers are cut, and the stumps pulled out a few weeks afterwards, when the operation can be performed without pain or injury to the bird. There are several interesting points in the domestic economy of the Ostrich. It is doubtful whether these birds are polygamous in the wild state; and in their semi-domesticated condition on the South-African farms, polygamy is said to be the exception, and not the rule. Artificial incubators are now very rarely used. Ostriches thrive best when they are allowed to do as they like. The larger the run, the better for the birds. They quarrel much less with each other, and they can the better select the particular kind of grasses which they require to keep themselves in good health. A large farmer told me that on his farm of twelve thousand acres he did not like his Ostriches to exceed 150 in number. Of course he had sheep, oxen, and goats on the same ground. The Ostriches were allowed to select their own site for the nest, which was merely a hollow scraped in the sand, sometimes under the shelter of a bush. The hen laid an egg every other day, until about 20 were laid, when the cock bird placed the eggs in order, and the pair began to sit. The cock took the greater share of the labour, sitting sixteen hours every day, or rather every night from 4 P.M. to 8 A.M. The hen only sat eight hours daily, from 8 to 4. Incubation lasts forty-two days; the cock bird turns every egg over daily, and it is not an uncommon thing for all the eggs to hatch. There is, however, great mortality amongst the young, which are liable to a variety of diseases, from tape-worms, wire-worms, &c. They do not become fully adult until the second year, many not until the third. The cock generally pairs with the same hen for several years in succession. Ostrich-farming on the Natal veldt has proved a disastrous failure, probably for want of some of the saline plants which grow on the Karroo.

I am able to add one species to the list of Natal birds. *Vanellus inornatus* is occasionally found near Durban. Other birds which I hoped might prove new to the South-African fauna turn out to be well-known species, but so incorrectly described in both editions of Mr. Layard's work as to be unrecognizable.

Numida verreauxi was described in 1870 from Natal (Elliot, Ibis, 1870, p. 300). The secondaries are described as "black, with their inner webs spotted; outer webs of the first four, *with the exception of a narrow line along the shaft, white*; *outer web* of the rest unspotted, black, with lines of bluish-green running their entire length, as though the spots had become confluent." (The italics are mine.) In the 'Monograph of the Phasianidæ,' Mr. Elliot copies his original descriptions of the birds in 'The Ibis,' but by some unaccountable blunder omits the words which I have italicized. This description, blunders and all, is copied in the "thoroughly revised" edition of Layard's 'Birds of South Africa.'

Otis melanogaster is a well-known and very handsome Bustard, found in various parts of South Africa, including Natal. Its ochraceous-buff upper parts, marked in various ways with black, scarcely differ from the tail in colour. When I found that the tail is described both by Mr. Layard and Mr. Sharpe as black, I naturally concluded that I had met with a new species; but since my return home I have discovered that the species described by the former, and retained in the "thoroughly revised" edition by the latter, is *Otis hartlaubi,* a perfectly distinct species, with a black tail, found in Abyssinia.

Syrnium woodfordi is described both in the original and in the thoroughly revised editions of the 'Birds of South Africa' as having "collar white with brown bars;" but has no collar of any kind! It is extremely puzzling to South-African students to meet with so many blunders, of which these are examples, in books written especially for their instruction; and it seems to me that I was fully justified in complaining (Catalogue of Birds, v. p. 123) of the *accustomed carelessness* of the writers on African ornithology.

Both in going and returning I had many opportunities of watching the large Gulls which frequent the Canary Islands and Madeira. It was a very rare circumstance indeed to be without half a dozen of them following in the wake of the ship, and often coming within ten yards of the stern. All the birds I saw were adult or nearly so, were large, with yellow legs and palish mantles, and belonged unquestionably to the Mediterranean form of the Herring Gull, *Larus argentatus cachinnans*; they certainly were neither the typical *L. argentatus* nor *L. fuscus.*

XXXVI.—*Notices of Recent Ornithological Publications.*

[Continued from p. 257.]

65. *Barboza du Bocage on new West-African Birds.*

[Oiseaux nouveaux de l'Ile St. Thomé, par J. V. Barboza du Bocage. Jorn. d. Sci. Math. Phys. e Nat. Lisboa, no. xliv. 1887.]

M. J. V. Barboza du Bocage describes two new Passerine birds from the island of St. Thomas, West Africa, as *Cinnyris newtoni* and *Prinia molleri,* and gives remarks on *Treron crassirostris,* which, contrary to the opinion of Captain Shelley, he considers distinct from *T. calva.*

66. *Blakiston on the Water-Birds of Japan.*

[Water-Birds of Japan. By T. W. Blakiston. Proc. U.S. Nat. Mus. 1886, p. 652.]

Capt. Blakiston has revised his list of the "Water-Birds" (*i. e.* Natatores) of Japan, which he now makes, including some doubtful species, to be 94 in number. Of these one third are "freshwater species." The list is arranged in four columns, to show the geographical range of the species. Some general remarks are prefaced.

67. *Dubois on two new Birds.*

[Description de deux nouvelles espèces d'oiseaux : par Alph. Dubois. Bull. Mus. Roy. Belg. v. p. 1, 1887.]

The species described are *Agelæus sclateri,* from Ecuador, and *Cuculus stormsi,* from Lake Tanganyika, East Africa.

68. *Gould's 'Supplement to the Trochilidæ.'*

[Supplement to the Trochilidæ, or Humming-Birds. By [the late] John Gould, F.R.S. &c. Part V. Folio. London : 1887.]

Another of the great series of works planned, and for the most part carried out, by John Gould is now finished by the issue of the fifth and final part of the 'Supplement to the Trochilidæ,' which has been prepared by Mr. R. B. Sharpe. The species figured in this part are:—

Petasophora germana.
Lampraster branickii.
Heliodoxa xanthogonys.
Helianthea osculans.
Bourcieria insectivora.
—— traviesi.
Thalurania jelskii.
Lophornis pavoninus.
Metallura primolina.
Adelomyia cervina.
Callipharus nigriventris.
Amazilia cupreicauda.

Besides these is also given the text relating to 29 other species, together with the titlepage, preface, and contents. The plates for this work, Mr. Sharpe tells us, were nearly all drawn during the lifetime of Mr. Gould; to these some others have been added from specimens lent for the purpose by Mr. Salvin.

The total number of Humming-birds treated of in the Supplement is 122, of which 60 are figured. In the original work 360 species were illustrated. This would make the total number of species about 482.

69. *Hartert on the Birds of the Niger District.*

[Ornithologische Ergebnisse einer Reise in den Niger-Benuë-Gebieten. Von Ernst Hartert. Journ. f. Orn. 1886, p. 570.]

Herr Ernst Hartert accompanied Herr Hegel on an expedition to the Niger and Binué in 1885, and along with Herr Staudinger undertook thence a journey into the far interior to Kano, Sokoto, and Gansa, in order to convey letters and presents from the German Emperor to the native potentates. An interesting account of the journey is first given, with general remarks on the fauna and flora. This is followed by a systematic list of the 187 species of birds of which examples were obtained during the expedition. Excellent field-notes and observations are added. *Poliospiza flegeli*, from Loko, on the Benué, is described as new. Descriptions of the eggs of some of the birds are added by Dr. Cutter.

70. *Hoffmann on the Woodcock.*

[Die Waldschnepfe. Ein Monographischer Beitrag zur Jagdzoologie von Dr. Julius Hoffmann. Zweite vermehrte Auflage. 8vo. Stuttgart: 1887.]

An enthusiastic essay of 196 pages upon *Scolopax rusticula*, and its manners, habits, and ways of life, also upon Woodcock-shooting as practised in Germany.

71. *Kolombatović on the Vertebrates of Dalmatia.*

[Imenik Kraljeišjaka Dalmacije. ii Dio Dvoživci, Gmazovi, i Ribe. Terze Aggiunte ai Vertebrati della Dalmazia. Prof. Juro Kolombatović. 8vo. Spalato: 1886.]

This pamphlet, if we understand it rightly, contains, besides an enumeration of the Reptilia, Amphibia, and Pisces of Dalmatia, written in Sclavonic, a third supplementary list of additions to the vertebrates of the same district in Italian. Among them the occurrence of 7 species of birds is recorded and remarks are added.

72. *Lawrence on a new Thrush.*

[Description of a new Species of Thrush from the Island of Grenada, West Indies. By George N. Lawrence. Ann. New York Acad. of Sci. vol. iv. p. 23.]

Mr. Lawrence describes a new Mock-thrush of the genus *Margarops* as *M. albiventris*. Two specimens, male and female, were obtained by Mr. J. G. Wells in Grenada. The species is allied to *M. montanus*.

73. *Leverkühn's 'Ornithological Excursions.'*

[Ornithologische Exkursionen im Frühling 1886. Von Paul Leverkühn. Monatschr. d. deutsch. Ver. z. Schütze d. Vogelwelt, 1886, pp. 241, 256, 286, 322.]

Herr Leverkühn kindly sends us an extra copy of his account of his ornithological journey from Clausthal to Kiel, and to the island of Sylt, and of other minor excursions made in the spring of 1886. In Holstein many nesting-places of Gulls and Terns were visited, and the Blue-throat (*Cyanecula leucocyanea*) was found breeding, besides other interesting species.

74. *Marshall on Changes in the German Avifauna.*

[Deutschlands Vogelwelt im Wechsel der Zeiten. Vortrag, gehalten in der Jahresversammlung des deutschen Vereins zum Schütze der Vogelwelt am 5 Juni 1886 zu Eisleben von Dr. William Marshall. 8vo. Hamburg: 1887.]

This is an address of 48 pages on the changes wrought by time in the avifauna of Germany, which was delivered last year at the Anniversary Meeting of the German Union for the Protection of Birds, held at Eisleben. Its leading idea appears to be to show that, so far from the Ornis remaining always the same, there is in this, as in other terrestrial matters, a slow but constant change going on.

75. *Meyer and Helm on the Saxon Ornithological Stations.*

[Erste Jahresberichte (1885) der ornithologischen Beobachtungstationen im königreich Sachsen bearbeitet von Dr. A. B. Meyer und von Dr. F. Helm. 8vo. Dresden: 1886.]

The Report on the work of the Ornithological Stations of the Kingdom of Saxony for 1885 consists of a pamphlet of 82 pages, with an accompanying map. The stations at which observations were made were 35 in number, and the observers 43. After a list of the stations and a short account of their positions and other peculiarities, follows a general essay upon the physical features of the whole Kingdom of Saxony and its four divisions of Bautzen, Dresden, Leipsic, and Zwickau. The special part which succeeds contains notes upon 180 species systematically arranged according to Homeyer's List (Ornis, i. p. 168) of German Birds.

76. *Ridgway on a new Oystercatcher.*

[Description of a recently new Oystercatcher (*Hæmatopus galapagensis*) from the Galapagos Islands. By Robert Ridgway. Proc. U.S. Nat. Mus. 1886, p. 325.]

Mr. Ridgway's *Hæmatopus galapagensis* is closely related to *H. palliatus*, but has the back sooty black and the white on the wing more restricted.

77. *Ridgway on a new Subspecies of* Cyclorhis.

[Description of a new Subspecies of *Cyclorhis* from Yucatan. By Robert Ridgway. Proc. U.S. Nat. Mus. 1886, p. 519.]

The new subspecies is called *Cyclorhis flaviventris yucatanensis*, from Yucatan, and resembles its species, but is much paler yellow below, and has other slight differences.

78. *Ridgway on a new* Myiarchus.

[Description of a new Species of *Myiarchus*, presumably from the Orinoco district of South America. By R. Ridgway. Proc. U.S. Nat. Mus. 1886, p. 529.]

This supposed new species is of the group of *M. nigriceps*. It is named *M. coalei*.

79. *Ridgway on a supposed Hybrid Woodpecker.*

[On a probable Hybrid between *Dryobates nuttallii* and *D. pubescens gaidnerii*. By Robert Ridgway. Proc. U.S. Nat. Mus. 1886, p. 421.]

Mr. Ridgway describes a specimen in the U.S. National Museum from California, which appears to be a hybrid between the two above-named species.

80. *Ridgway on a new* Picolaptes.

[Description of an apparently new Species of *Picolaptes* from the Lower Amazons. By Robert Ridgway. Proc. U.S. Nat. Mus. 1886, p. 523.]

The type of this supposed new species was obtained at Diamantina, near Santarem, Lower Amazons, by Mr. C. B. Riker. It is named *Picolaptes rikeri*, after the collector, and is of " striking appearance," quite different in coloration from any other Dendrocolaptine bird with which the describer is acquainted.

81. *Ridgway on Colours.*

[A Nomenclature of Colours for Naturalists, and Compendium of Useful Knowledge for Ornithologists. By Robert Ridgway. 8vo. Boston: 1886.]

The aim of the author of this useful work has been, in the first place, to supply naturalists with a modern standard for the nomenclature of colours, on the principle of Syme's edition of Werner's well-known treatise. His judicious remarks on the principles of colour, and on the really essential pigments for producing an infinity of variations, are illustrated by ten hand-coloured plates, followed by a vocabulary in seven languages. Obstacles will doubtless present themselves and hinder a complete or immediate conformity with the standard, but the principle is undoubtedly a good one. As regards the second part, with its glossary of technical terms used in descriptive ornithology and its six outline plates showing the proper names for the various parts of a bird's body, the various shapes of feathers and and their names, and a similar scheme for eggs, nothing so good has hitherto been brought before us, and every ornithologist should use it. There is also a table for the conversion of the various metrical systems, and altogether the book is a mine of information.

82. *Salvadori's 'List of Italian Birds.'*

[Elenco degli Uccelli Italiani, compilato da Tommaso Salvadori, Genova: 1887. 8vo. 332 pp.]

Count Salvadori's list of Italian birds is prepared very much after the fashion of our own list, which, as he tells us, gave him the idea of compiling the present publication. After the name of each species in Latin and Italian, the principal synonyms referring to the Italian avifauna are given, the meaning of the scientific name is explained, and a few short sentences are added concerning the time and place of the bird's occurrence within the boundaries of Italy. But Count Salvadori does not extend these boundaries quite so far as Prof. Giglioli, who, in his 'Avifauna Italica,' included Dalmatia, nor does he adopt some of that author's rather doubtful species. Eleven of these are rejected from the list of veritable Italian birds, and are included in the present volume along with others, but in brackets, to show that they have been at one time accredited to the Italian list.

The avifauna of Italy is thus held by Salvadori to contain 428 species. But 74 others which have been falsely or on insufficient evidence at one time included are also mentioned in the present volume. Although many of the derivations of names given by Salvadori coincide with those prepared by Mr. H. T. Wharton for our British list, many are quite new and contain valuable additions to etymology (see *Strix flammea*, *Cypselus melba*, *Acredula*, and other names).

The nomenclature used for several species by Count Salvadori is different from that adopted in the British list, mainly owing to the fact that the genera adopted are more numerous. This is not, we venture to think, in most cases any improvement. Some generic names appear to have been traced for the first time to their original place of publication. Amongst these is *Otocorys,* which appears to have been first propounded in 1839 in the Nuov. Ann. d. Sc. Nat. (Bologna) ii. p. 407. Finally we may remark that a new specific term, *Saxicola occidentalis,* is proposed (p. 116) for the western form of *S. stapazina,* and a new generic name, *Ionocicca,* p. 236, is assigned to *Porphyrio alleni,* under the plea that *Hydrornia* of Hartlaub is too near *Hydrornis*. But *Picus* and *Pica* are both employed without inconvenience!

83. *Stejneger on* Pardalotus.

[Notes on Species of the Australian Genus *Pardalotus.* By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1886, p. 294.]

Dr. Stejneger criticizes Mr. Sharpe's arrangement of this genus in the 'Catalogue of Birds,' vol. x., and propounds a new "Key to the Species."

84. *Stejneger on a new Rail.*

[Description of *Rallus jouyi,* with Remarks on *Rallus striatus* and *Rallus gularis.* By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1886, p. 362.]

Dr. Stejneger describes under the name *Rallus jouyi* a Chinese Rail allied to *R. striatus* of the Philippines and *R. gularis* of Java. Two specimens of this supposed new species were obtained by P. L. Jouy at Shanghai. We conclude therefore that this is the species usually called *R. striatus* by writers on Chinese ornithology.

85. *Stejneger on a second European Ring-ouzel.*

[On *Turdus alpestris* and *Turdus torquatus*, two distinct Species of European Thrushes. By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1886, p. 365.]

Dr. Stejneger lately discovered a new British Tit (see Ibis, 1887, p. 118). He now invites our attention to what will perhaps be a still greater surprise to the benighted ornithologists of Europe—the existence in our midst of a second species of Ring-ouzel, the *Turdus alpestris* of Brehm. This form of Central Europe Dr. Stejnejer maintains to be perfectly distinct from *T. torquatus.* It is figured in Dresser's 'Birds of Europe' t. 15, fig. læv.) as a variety of the young female in first winter plumage.

86. *Stejneger's 'Review of Japanese Birds.'*

[Review of Japanese Birds. By Leonhard Stejneger.—II. Tits and Nuthatches. Proc. U.S. Nat. Mus. 1886, p. 374. III. Rails, Gallinules, and Coots. *Ibid.* p. 395.]

Dr. Stejneger now attacks the Tits and Nuthatches of Japan, in continuation of his review of the Japanese ornis, treating these groups as different subfamilies of a common family, Paridæ. Of *Parus* he allows 6 Japanese species, of *Ægithalus* 2, and of *Remiza* (a new generic name for *Parus pendulinus*) 1; total 9 Japanese Parinæ. Of *Sitta*, besides *Sitta amurensis*, Dr. Stejneger makes two other Japanese subspecies, *S. amurensis clara* (subsp. nov.) from Yesso, and *S. amurensis albifrons* from the Kuriles. The Rails, Coots, and Gallinules of Japan, according to Dr. Stejneger, number 7 species, concerning which full details are given.

87. *Stejneger on* Synthliborhamphus wumizusume.

[On the Status of *Synthliboramphus wumizusume* as a North-American Bird. By L. Stejneger. Proc. U.S. Nat. Mus. 1886, p. 524.]

Dr. Stejneger shows that there is no good evidence for placing this Auk in the American list. The supposed American specimens prove on examination to be *S. antiquus.*

88. *Stejneger on Birds from the Liu Kiu Islands.*

[On a Collection of Birds made by Mr. M. Namiye in the Liu Kiu Islands, Japan, with Descriptions of new Species. By Leonhard Stejneger. Proc. U.S. Nat. Mus. 1886, p. 634.]

Dr. Stejneger's paper is based on some specimens of birds from the Loo Choo, or, as he prefers to call them, the Liu Kiu Islands, contained in a collection received by the U.S. National Museum from the Educational Museum of Tokio, Japan, and on another collection from the same group sent to Dr. Stejneger for examination by Mr. M. Namiye of the same establishment. The specimens are referred to 14 species, whereof 5 are new—namely *Treron permagna, Hypsipetes pryeri, Icoturus namiyei, Chelidon namiyei,* and *Pericrocotus tegimæ. Icoturus,* according to Dr. Stejneger, is a new genus of Timeliidæ which should include also *Sylvia komadori* of the 'Fauna Japonica.' Dr. Stejneger also gives the new name *Pericrocotus japonicus* to *P. cinereus,* ex Japonia, auctt.

89. *Wells and Lawrence on the Birds of Grenada, W.I.*

[A Catalogue of the Birds of Grenada, West Indies, with Observations thereon. By John Grant Wells, of Grenada (Edited by George N. Lawrence.) Proc. U.S. Nat. Mus. 1886, p. 609.]

Mr. Wells has on different occasions transmitted to Mr. Lawrence, through the Smithsonian Institution, specimens of the birds of Grenada for identification, in order to prepare a catalogue of the species found in that island. In the present paper he enumerates 92 species thus determined, and appends full and interesting notes on their habits. Mr. Wells has thus added 38 species to the avifauna of the island, as previously ascertained by Mr. Ober. It now seems certain that the only *Certhiola* found in Grenada is the black *C. atrata, C. saccharina* being only met with in the small islands on the north coast (Isle de Rhonde and Carriacou).

XXXVII.—*Letters, Extracts, Notices, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Smithsonian Institution,
21st April, 1887.

Sirs,—The articles by Canon Tristram on the supposed breeding-plumage of *Podiceps occidentalis*, Lawr., in the January and April numbers of 'The Ibis,' interest me exceedingly, inasmuch as it is a great mystery to me what the species can be to which he refers. It certainly is not *P. occidentalis*, whose breeding-plumage has long been well known to American ornithologists, and is accurately described in the 'Water-Birds of North America' (vol. ii. p. 422), from *numerous specimens obtained on the breeding-grounds, together with their eggs and young.* In none of these is there the slightest indication of any ornamental tufts or other distinctive features so characteristic of most (but not of all*) Grebes during the nuptial season.

The numerous specimens of *P. occidentalis* in breeding-plumage which I have been able to examine, and which are chiefly in the collection of the United States National Museum, are absolutely similar in all essential characters of plumage to midwinter specimens (*and young birds also*), the only appreciable difference consisting in the greater intensity of the blackish colour of the pileum and hind neck. Even the downy young is very different from that of other Grebes, being absolutely destitute of markings of any kind, the upper surface being entirely plain brownish grey (lighter on pileum and hind neck), and the lower parts continuously pure white. It is this "immutability" of plumage which, scarcely less than marked peculiarities of structure, separates *P. occidentalis* (and also *P. clarkii*, Lawr., if this proves valid) from all other known Grebes, not excepting even its supposed near relation *P. major* (Bodd.), of South America. The latter, though somewhat resembling *P. occidentalis* superficially, is in all respects a true *Podiceps* (or, as I prefer to call the genus, *Colymbus*), while *P. occidentalis* is the type of the genus *Æchmophorus*, Coues, which, in my opinion, is quite as much entitled to full generic rank as *Podilymbus*, Lesson, or even more so, since the downy young of the latter are marked exactly like those of the species of true *Podiceps*.

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* *E. g.*, the species of *Podilymbus*, in which, however, there is a black throat-patch, while the bill is coloured very differently in summer and winter.

If the Vancouver-Island bird which Canon Tristram supposes to be the breeding-plumage of *P. occidentalis* be not of an undescribed species, may it not possibly be *P. holboellii*, Reinh., with the throat unusually light-coloured?

Yours &c.,
Robert Ridgway.

Northrepps, May 1887.

Sirs,—Having been indebted to the kindness of Mr. F. W. Styan for an opportunity of examining the Raptorial birds that form a portion of the collection from Foochoo which he has described in the last number of 'The Ibis,' I am desirous of offering some remarks on two of the specimens there referred to.

Mr. Styan, at p. 233, includes two Hawks in his list under the name of "*Accipiter virgatus*," and adds, "Mr. J. H. Gurney tells me these are identical with the Japanese birds, the *A. gularis* (T. & S.)." As this would seem to imply that I consider *A. gularis* to be merely a synonym of *A. virgatus*, I wish to explain that it is, in my opinion, a good species, quite distinct from *A. virgatus*, but identical with *A. nisoides*, Blyth, which appears to me to be its oldest designation.

I therefore think that the two specimens mentioned in Mr. Styan's list should not stand as *A. virgatus* but as *A. nisoides*.

I may add that I have somewhat fully discussed the distinctness of these species, and also the synonymy of *A. nisoides*, in an appendix (at p. 165) to my 'List of Diurnal Birds of Prey.'

Yours &c.,
J. H. Gurney.

Labuan, April 30, 1887.

Sirs,—I beg to be permitted to place on record the occurrence in Borneo of an *Ianthœnas*, I think *I. griseigularis*, or a Pigeon but slightly differing from it. Two were seen a few days ago on Pulan Tiga, an island just north of Labuan, and I obtained one of them. They are probably stragglers from one of the Philippine Islands.

Yours &c.,
A. EVERETT.

Newton Lochmaddie, North Uist.
17th June, 1887.

SIRS,—While standing on the pier at Lochmaddie yesterday I observed a Common Swift (*Cypselus apus*); it passed from west to east, and as I was obliged to leave to attend to business, I cannot say whether it remained about or not. Neither I nor my factor, Mr. John MacDonald, who is an intelligent observer, have ever observed this bird in North Uist; but the latter has seen them in the Minch, and as I read in the last edition of 'Yarrell's Birds' that the Outer Hebrides are excepted from its British range, I think it well to note the fact of its appearance here. I may add that in the first days of May, when on a voyage from Rio de Janeiro and approaching Madeira, but out of sight of land, I saw a Swift which accompanied the steamer for some little time. It was certainly not *Cypselus melba*, by its size, and I did not make out or notice any white on the throat, though this might well be owing to my eyesight, which is not as good as in my younger days*.

Yours &c.,
JOHN W. P. CAMPBELL-ORDE.

P.S.—In a note to 'Yarrell,' p. 371, vol. ii., I observe mention of the Needle-tailed Swift. I have in my collection a specimen killed in Bermuda about 1850, which I made out, as I thought, to be the Australian *Chætura*. If so, the range of this bird is even wider than is mentioned in 'Yarrell'†.

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* [It was possibly the Madeiran Swift, *C. unicolor*, which has no white on the throat.—EDD.]

† [This was, perhaps, the American Chimney Swift, *Chætura pelagica*, a spine-tailed species which straggles to Bermuda.—EDD.]

8 Atholl Crescent, Edinburgh.
June 17th, 1887.

Sirs,—With reference to your mention at page 251 of the current volume of 'The Ibis' of the disappearance of the Spoonbill from the neighbourhood of Amsterdam, you will be glad to learn that a thriving colony still exists not far from that city. I have just received the annexed letter from an ornithological friend resident there, which will, no doubt, be read with interest.

Yours &c.,
John J. Dalgleish.

"Amsterdam, 15th June, 1887.

"Dear Sir,—It is a pity you did not come to see the Spoonbills: the report that the Spoonbills have deserted Holland is a mistake, the place where they build now is the Naarder Meer. A year ago there was great danger of their losing this place, as the lake in question was being drained. Fortunately for the Spoonbills the soil proved bad and the trouble to keep the place dry was too great, so it was abandoned as a bad job, and the water having come back in an incredibly short time, the Spoonbills reign again in their old place. A part of the lake never was laid dry, even whilst the drainage was going on. The Spoonbills had not abandoned the place altogether, but, of course, their rest and happiness were gone, and probably their ultimate destruction would only have been a question of a few years. At this time of the year I go almost daily by the rail that passes the lake, and so have occasion to admire the startling effect of a long row of these splendid white birds standing knee-deep in the water and contrasting wonderfully against the green background. The Red (Purple) Heron and several other aquatic birds nest in the same place.

"Yours &c.,
"F. E. Blaauw."

Anniversary Meeting of the British Ornithologists' Union, 1887.—The Annual Meeting of the British Ornithologists'

Union was held at 6 Tenterden Street, on Wednesday, the 4th May, at 6 P.M., Mr. SCLATER in the Chair.

The Minutes of the last Meeting having been read and confirmed, the Committee presented their Report, which, after explaining the state of the Society's finances, announced the deaths of two Members since the last Anniversary, viz. Colonel A. E. Knox, one of the original Members, and Mr. Robert Gray, F.R.S.E., who joined the Union in 1871. The total number of Members was stated to be 198, viz. 168 Ordinary, 1 Extraordinary, 9 Honorary, and 20 Foreign Members.

The following new Members were balloted for and declared duly elected:—

Frederick Charles Aplin, Bodicote, Banbury.
W. W. Fowler, M.A., Lincoln College, Oxford.
John Pleydell Wilton Haines, The Lodge, Gloucester.
Charles T. Hebbert, 12 Hereford Gardens, W.
Lieut.-Col. George Morgan, Biddlesden Park, Brackley.
George Cameron Norman, Collingham House, Cromwell Road, S.W.
Frederick William Styan, 23 Upper Bedford Place, W.C., and Shanghai, China.
John Swinburne, Shona Ranche, St. John's, Apache County, Arizona, U.S.A.
Jeffery Whitehead, Southwood, Bickley, Kent.
Scott Barchard Wilson, Heatherbank, Weybridge Heath, Surrey.

The President and Secretary having been re-elected, Mr. Bidwell was elected on the Committee in the place of Mr. Godman, who retired by rotation. The Officers for the year 1887–88 will be therefore as follows:—

President.

THE RIGHT HON. LORD LILFORD.

Secretary.

H. E. DRESSER, ESQ.

Editors.

P. L. SCLATER, ESQ.
HOWARD SAUNDERS, ESQ.

Committee.

W. T. BLANFORD, ESQ.
E. CAVENDISH TAYLOR, ESQ.
E. BIDWELL, ESQ.

The Secretary then, on behalf of Mr. T. H. Nelson, of Redcar, Yorkshire, called the attention of the Members present to a petition *against* the extension of the close-time for sea-birds in the North Riding of Yorkshire, which that gentleman sent, requesting the Members present, if they approved of it, to sign it. After a long discussion it was proposed by Canon Tristram, and seconded by Mr. G. C. Taylor, "That, in the opinion of the Members of the British Ornithologists' Union here present, an extension of the close-time for sea-birds on the east coast of England to the 1st September would be highly advisable." On being put to the Meeting this Motion was carried by a large majority. A vote of thanks to the Chairman, as also to Captain Shelley for the use of his room, was proposed by Mr. W. T. Blanford, seconded by Canon Tristram, and carried by acclamation. The Meeting then adjourned, and the Annual Dinner, held at the Café Royal, was attended by thirty-two Members and guests.

Song of Cyphorhinus.—In Mr. Simson's lately published 'Travels in the Wilds of Ecuador' (London, 1886) the song of what is, we believe, a Wren of the genus *Cyphorhinus,* met with between the Topo and the Pintuc, on the route from Riobamba to the Napo, is described as follows:—"Here I first heard the song of the 'Flautero' (flute-bird), among birds the mellowest and most beautiful songster that I remember having heard. His song is not quite the same in all individuals, but may be likened in tone to the most mellow sweet-sounding fluet; and the musical correctness of all his notes is astonishing, and makes one imagine the sound to be produced by human agency. On one occasion, after this, I was utterly deceived, being out in the woods. I felt certain of being far from all my companions and other human beings, when I suddenly stopped, hearing, as I thought, some-one with a knowledge of music whistling charmingly and clearly quite close to me. But I suddenly remembered the Flautero, and espied my little friend singing his song, which ended on the key-note. He is a very insignificant-looking little greyish-coloured bird, and, I was informed, always dies in captivity. He dances and performs strange antics before the female during his song."

Structure of the Penguins.—We wish to call the special attention of ornithologists to the beautiful specimen illustrative of the wing of the Penguins which has been recently added to the series of bird-structures now being prepared, under Prof. Flower's superintendence, for the entrance-hall of the British Museum of Natural History. It is quite evident that while the Struthiones (at any rate the Ostrich and Rhea) do not materially diverge from the great mass of birds in the arrangement of their wing-feathers, and may, so far as this point goes, be the degenerate descendants of forms that once had wings more or less available for flight, the Penguins, in their wing-structure, as in their foot-structure, must be held to belong to quite a different category. It is impossible to suppose that the ancestors of the Penguins ever had normal wings, so totally diverse is the arrangement of their wing-feathers. The Impennes, in fact, as has been already hinted (Ibis, 1886, p. 212), must be regarded as one of the lowest, if not absolutely the least developed, types of ornithic life, and should be kept in any natural arrangement completely separate from the normal series.—P. L. S.

Habits of the Oxpecker.—In a letter addressed to Lord Walsingham, dated River Lumi, between Tavuta and Rombo (Kilimandjaro district of East Africa), Mr. Frederick J.

Jackson gives an interesting account of the habits of the Oxpecker, or Rhinoceros-bird (*Buphaga erythrorhyncha*)*:—

"I was rather amused at a Rhinoceros-bird this afternoon, which was on the back of the cow Rhinoceros that I shot. There were three others with it, which settled again on its back after it was dead. On my going up and getting within 50 yards of the body, they all flew off with their rather Missel-thrush like call; but as the Rhinoceros could take no notice of them, this one, when I was within 15 yards, suddenly darted down again on to its back, fluttered its wings, screaming all the time, and then flew off after the others. If it were not for the Oxpeckers, Rhinoceroses would be the easiest of all game to stalk; but as they are nearly always accompanied by three or four of the birds, it really amounts to stalking the birds more than the Rhinoceros. If they would only sit still on the Rhinoceros, one might have a better chance; but they have a provoking habit of occasionally flying up into the tree the Rhinoceros may be lying or standing under at the time. On two or three occasions I have been betrayed in this way."

Birds of Diego Garcia.—In a recently issued number of 'Deutsche geographische Blätter,' Dr. Finsch publishes an interesting account of a short visit to Diego Garcia, when on his way from Suez to Australia in the Orient s.s. 'Chimborazo,' in July 1884. A lively description is given of the great breeding-place of *Sterna fuliginosa* on the "East Island," which at that date was in full swing. The eggs were so crowded together on the sand that it was difficult to pick one's way amongst them. A few Noddies (*Anous stolidus*) breed on the same spot, also on the ground. The Sooty Terns are said to arrive in June to breed, and to leave the island before November.

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* *Cf.* Fischer, J. f. O. 1885, p. 132.

THE IBIS

FIFTH SERIES.

No. XX. OCTOBER 1887.

XXXVIII.—*On an apparently new Species of* Zosterops *from the Island of Anjuan, Comoro Group.* By H. B. Tristram, D.D., F.R.S.

(Plate XI.)

I was surprised, on looking through my series of *Zosterops*, to find a specimen which had been obtained by Mr. C. E. Bewsher in 1879, and had been labelled *Z. anjuanensis* before I purchased it, but which I had placed, without noticing its label, among my series of grey-backed White-eyes, as the representative of this section from the Comoros. In every point, except in coloration, it comes very close to *Z. anjuanensis*, but the measurements are slightly larger. I have compared it with eight specimens of its congener, and do not find in any of them the slightest indications of a tendency to vary or to lose the bright olive-green of the upper parts or the rich yellow of the throat. This bird shows no trace of green on the upper surface, which is of a lightish ashen grey; but the throat is very faintly washed with yellow, as is a very narrow portion of the forehead.

I sent my specimens to Professor Newton and Sir Edward Newton, and they coincide in my opinion that it must belong to a distinct species. But the Professor sent to me a specimen which he has had several years in spirit, and which Mr. Cullingford, of Durham, has now very carefully prepared. This bird is very near mine, but the grey on the back seems slightly tinged with green, and the yellow wash on the throat is more decided, while the tarsus is slightly shorter. Of course, however, it is dangerous to draw any positive conclusion as to coloration from a specimen which has been eight years in spirit. My bird has every appearance of being fully adult, and has not been in spirit. I therefore venture to describe it as new, and to call it

ZOSTEROPS PRÆTERMISSA, sp. nov. (Plate XI. fig. 1.)

Z. capite et dorso albido-cinereis; frontis margine usque ad oculos obscure luteo; loris nigris; plumarum annulo oculos cingente argenteo; thorace flavido vix tincto; corpore subtus et lateribus albidis cinereo lavatis; rostro forti, paullulum longiore quam in *Z. mauritiana*. Long. tot. 4·3, alæ 2·25, caudæ 1·75, tarsi ·72.

Hab. Anjuan, inss. Comorensium.

I take this opportunity, with the kind assent of the Editors of 'The Ibis,' of adding a figure (Plate XI. fig. 2) of my *Zosterops hovarum*, recently described in this Journal (Ibis, 1887, p. 234).

The following is a short synopsis of the species of *Zosterops*, so far as at present known, from Madagascar and the Mascarene Islands:—

GREEN-BACKED SPECIES.

Z. semiflava, E. Newton. Uniform greenish yellow above, brighter on the rump; lower parts rich yellow, with chestnut flanks.—*Hab.* Seychelles.

Z. mayottensis, Schlegel. Not seen by me; it seems from the description and from Pollen and Van Dam's figure to be very close to *Z. semiflava,* but with a bright citron-yellow forehead.—*Hab.* Ins. Mayotte.

Z. kirki, Shelley. Uniform greenish yellow above; uniform lemon-yellow below. This species has recently been described by M. Oustalet.—*Hab.* Grand Comoro Island.

Z. anjuanensis, E. Newton. Greenish yellow above, with narrow orange forehead and black lores; chin, throat,

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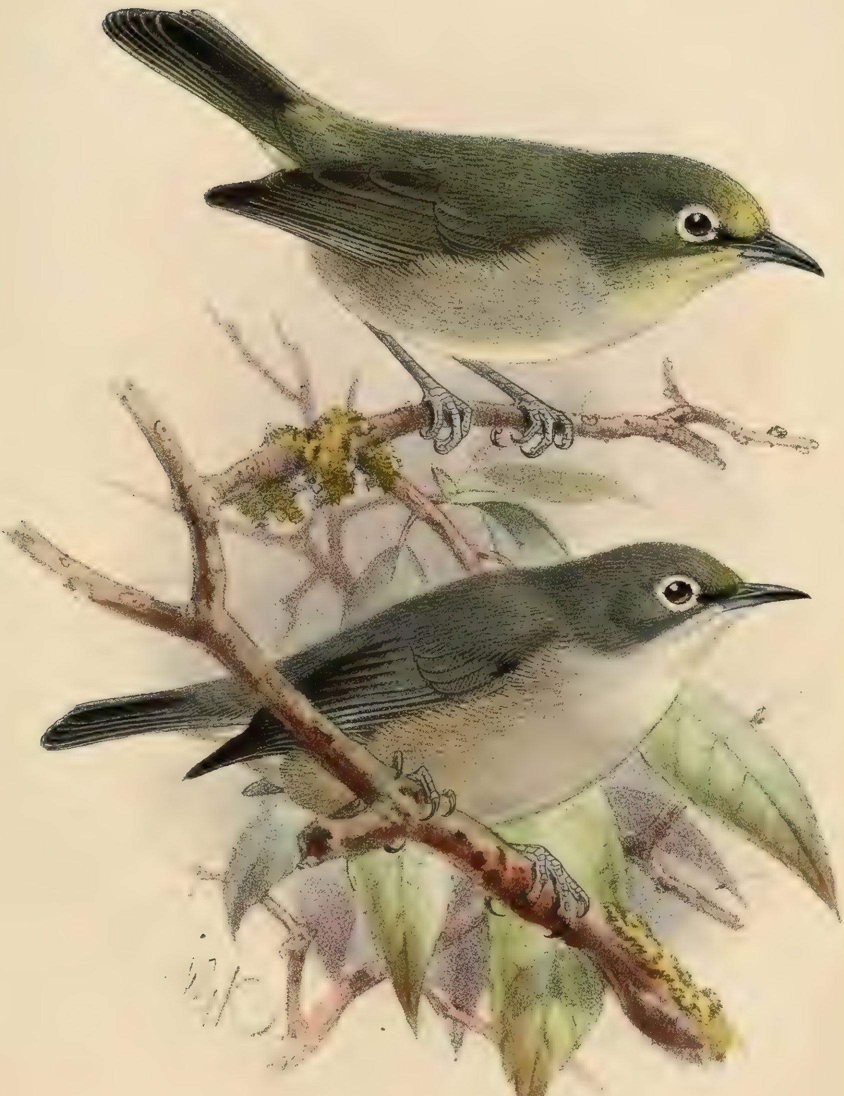

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Mintern Bros.

1 ZOSTEROPS PRÆTERMISSA.
2. ZOSTEROPS HOVARUM.

and lower tail-coverts orange-yellow; breast and abdomen pale ashy.—*Hab.* Ins. Anjuan.

Z. madagascariensis (Gmel.). Like *Z. anjuanensis,* but without the orange forehead; lores only blackish, and throat and under tail-coverts a much paler yellow.—*Hab.* Madagascar.

Z. hæsitata, Hartl. Back dark green, rump and upper tail-coverts lighter; head blackish; chin lightish grey; throat and breast ashen grey; abdomen whitish; under tail-coverts pale yellow; bill decurved.—*Hab.* Ins. Bourbon.

R. curvirostris, Swains. Head and upper back slaty grey; lower back green; chin, throat, and breast ashen; flanks lighter; abdomen whitish; under tail-coverts yellow; bill decurved.—*Hab.* Mauritius.

GREY-BACKED SPECIES.

Z. modesta, E. Newton. Larger; uniform olive-brown above; chin and lower tail-coverts whitish; rest of lower parts light olive-brown.—*Hab.* Seychelles.

Z. borbonica (Gmel.). Smaller; olive-brown above; upper tail-coverts white; no ring of white feathers round the eye; lower parts ashy grey, lighter on the chin and under tail-coverts; flanks chestnut.—*Hab.* Ins. Bourbon.

Z. mauritiana (Gmel.). Upper parts delicate bluish grey; rump and upper tail-coverts white; no ring round the eye; lower parts white, tinged with grey on the breast; flanks rusty brown.—*Hab.* Mauritius.

Z. hovarum, Tristr. Like *Z. mauritiana,* but without the white rump, and with a conspicuous white ring round the eyes.—*Hab.* Madagascar.

Z. prætermissa, Tristr. Upper parts whitish ashen, with a narrow faint yellowish forehead and white ring round the eyes; the whole lower parts ashy white, with a yellowish tinge on the throat.—*Hab.* Ins. Anjuan.

XXXIX.—*A List of the Birds of Portugal.*
By William C. Tait, Oporto.

[Concluded from p. 314.]

160. Ardea cinerea, Linn. "Garça."

The Common Heron sometimes arrives as early as the end of August and stays till the middle of February. It is abundant on the edge of the lagoon between Ovar and Aveiro, and also at Esmoriz; and it may occasionally be seen at the mouth of the Douro, but I am not aware that it breeds in this country. Being considered good eating, it is much sought after by the gunners, and its fat has a great reputation as a cure for rheumatism.

161. Ardea purpurea, Linn. "Garça."

There are specimens of the Purple Heron in the Lisbon and Coimbra Museums, and Dr. Carvalho informs me that it breeds in the Foja marsh.

162. Ardea garzetta, Linn. "Garça ribeirinha," Portimão; "Garcêta," Faro; "Chisco," Olhão.

The Lisbon Museum possesses specimens of the Little Egret from the Ribatejo and others from the Algarve, on the coast of which I found this bird plentiful. A colony builds a short distance from Portimão on a small, round, inaccessible islet, composed of marine fossils, covered at the top with a short brushwood on which the Egrets make their nests. It was very picturesque to see the Egrets rise in a white cloud as we approached in a boat. I do not know of any other nesting-place in Portugal.

163. Ardea bubulcus, Audouin. "Garciote," "Garça boieira," Esmoriz; "Garça da Barbaria," Alpiarça.

The Buff-backed Heron appears in Portugal in the spring, and probably nests in this country, where it has acquired the name of "Garça boieira" (Ox Heron), from its habit of accompanying the cattle while pasturing on the marshes. In the spring of 1880 I received from Alpiarça, near Santarem, on the banks of the Tagus, a specimen which had actually been shot on the back of an ox, where these birds sometimes perch to pick off parasites. There are examples in the Coimbra and Lisbon Museums, and I expect the birds are not uncommon on the banks of the Tagus. At Alpiarça they are said to go about in flocks and to be rather tame.

164. ARDEA RALLOIDES. "Papa-ratos," Coimbra Museum. There are specimens of the Squacco Heron in the Coimbra and Lisbon Museums from Corruche and Evora. On May 14th, 1882, I saw three of these birds on the side of the lake at Esmoriz, as I passed close in a boat, having my binocular with me at the time. In all probability this is a summer visitant, as I never met with it whilst shooting in the marshes in autumn or winter.

165. ARDETTA MINUTA (Linn.). "Garçôto," Ovar, Estarreja and Augeja; "Touro gallego," Vagos, Aveiro; "Garcenho," Coimbra Museum.

The Little Bittern is abundant on the marshes about Ovar, Estarreja, and other suitable localities, to which it is a summer visitant. It makes a nest in the tall reeds just raised above the level of the water, of reed-stalks lined with leaves or rushes, on which are deposited four to six white eggs. When flushed, the buff colour of the body and the black of the wings are very conspicuous. As winter approaches, the bird disappears, though I have known one shot near Oporto as late as the 20th November. On the 16th of May, 1882, a Little Bittern was caught alive in a dark cellar of a house at the mouth of the Douro. It is supposed that it was migrating by night, and that, as daylight broke, it made for the nearest dark place, which happened to be the cellar of this house.

166. BOTAURUS STELLARIS (Linn.). "Ronca," "Touro-paul," Estarreja; "Abetouro," Coimbra Museum.

I believe the Common Bittern to be a resident in Portugal. I have often met with it while out Snipe-shooting on the sides of the lagoon near Ovar and Estarreja in the winter months; but although Dr. Carvalho tells me that it nests in the Foja marsh near Coimbra, and the country people agree in saying that it breeds in the marshes among the tall reeds, I have never been able to find its nest. It is probable that many arrive from the north in the late autumn, as at Leça de Palmeira I have at that season seen birds which I felt sure were Bitterns which had settled in the fields at the side of the creek while on passage. In the winter of 1873, while out Snipe-shooting, a friend and myself came upon a flock of Bitterns in a marsh, and putting them up one by one, as they lay close, we counted eleven, shot eight, and bagged seven of them. This was done in the heat of the chase, and since then I have spared any Bitterns which I might put up. They are very tender birds, and a slight wound with small shot brings them down.

167. CICONIA ALBA, Bechst. "Cegonha."

The White Stork is found in Portugal nearly all through the year, being absent for only a short time in winter, and it is one of the first arrivals, for I have seen some as early as January in the neighbourhood of Abrantes. It is common in the valley of the Tagus, the Upper Douro, and in the Alemtejo, but I have never seen it near Oporto. It nests in church-steeples and also in large trees; a pair is said to resort to a poplar tree near Coimbra every year.

168. CICONIA NIGRA (Linn.). "Cegonha."

The Black Stork is scarcer than the preceding. There is a specimen in the Lisbon Museum, obtained near Evora, and in the Coimbra Museum there are many from the Alemtejo, where the species breeds. Dr. Hans Gadow tells us that in the summer of 1885 he saw one at the gorge of the Pulo do Lobo, on the Guadiana.

169. PLATALEA LEUCORODIA, Linn. "Colhereiro."

The Spoonbill is a winter visitant to Portugal. It has occasionally been shot or seen at the mouth of the Douro, the small lake at Esmoriz, and on the lagoon at Aveiro.

170. PLEGADIS FALCINELLUS, Linn. "Macarico preto," Esmoriz.

The Glossy Ibis is well known at Esmoriz, where it is said to arrive from the 25th of July onwards on passage.

171. PHŒNICOPTERUS ROSEUS, Pall.

The only Portuguese specimen of the Rosy Flamingo of which I know is in the Coimbra Museum, obtained many years ago from Estarreja.

172. ANSER CINEREUS, Meyer. "Ganso bravo."

The Grey Lag Goose is a winter visitant in large flocks to the wide plains on the banks of the Tagus and other suitable localities. I have one shot at Esmoriz in the winter of 1881–82.

173. ANSER SEGETUM. "Ganso bravo."

The Bean Goose frequents the same situations as the above, and is likewise a winter visitant.

174. BERNICLA BRENTA (Pall.). "Ganso bravo."

The Brent Goose is also a winter visitant, but it appears to be rarer than the two preceding species. I have a specimen shot near Vianna, on the banks of the River Lima, and there is one in the Coimbra Museum. One was shot on December 28th, 1884, at the mouth of the River Douro, and two in the winter of 1870. On one occasion I saw a pair flying over the east end of Oporto, high in the air, in the neighbourhood of the river, and through my field-glass I could distinctly make out the white neck-markings and the dark plumage. We are probably on the southern limit of this bird's wanderings.

175. CYGNUS, sp. inc. "Cysne bravo."

Wild Swans rarely appear in this country, and I cannot say with any certainty of what species they are: *probably* the Whooper. They have been seen on the Douro, and one which frequented the lake at Esmoriz for a considerable time one winter became well known to all the gunners in the neighbourhood and had no rest from their persecution; but it soon learnt to be wary and keep out of range of shot-guns, so they then took to firing at it with bullets, when finding matters getting serious, it moved on to some other station.

176. TADORNA CORNUTA (S. G. Gmel.).

The Common Sheldrake is a regular winter visitant to the lagoon between Ovar and Aveiro every winter. The Murtoza "punters" shoot a few, which are sent to the Oporto market.

177. ANAS BOSCAS, Linn. "Lavanco," Esmoriz, Ovar, Estarreja, Aveiro; "Pato real," Valença, Angeja; "Adem," Coimbra Museum.

I have met with the Mallard all the year round in Portugal and found two nests with about a dozen eggs in each at Ovar, among some rushes on the ground, catching the female on one of them for identification.

178. ANAS ANGUSTIROSTRIS, Ménétr. "Pardilheira," Lisbon Museum.

In the Lisbon Museum there are two specimens of the Marbled Duck, and it cannot be very rare where they came from, as it has a local name; but I have never seen it in the north of Portugal, and most likely it is a summer visitant.

179. CHAULELASMUS STREPERUS (Linn.). "Frisão," Coimbra Museum.

Specimens of the Gadwall have been obtained in winter from the lagoon at Ovar and from the Ribatejo.

180. SPATULA CLYPEATA (Linn.). "Pintalhão," Murtoza; "Pato trombeteiro," "Colhereira," Coimbra Museum.

The handsome Shoveller Duck is frequently to be seen for sale in Oporto from the middle of October to the middle of March, and is obtained on the Ovar lagoon in the neighbourhood of Murtoza.

181. QUERQUEDULA CRECCA (Linn.). "Marreca," general name; "Marneco," Esmoriz.

The Teal is frequently obtained in winter in suitable localities such as near Murtoza. At Angeja I was told that it nested there in the fields among the tall rye-grass, and at Guilherey, near Tuey, in a small marsh; but I have not been able to ascertain whether the bird was really this species or the Garganey, or the Marbled Duck.

182. Querquedula circia (Linn.). "Cantadeira," Murtoza; "Rangedeira," Coimbra Museum.

At Murtoza I was told that the Garganey Teal arrives there in large numbers in the spring, but does not remain to breed. I have seen them for sale at Oporto, but only in February and March.

183. Dafila acuta (Linn.). "Arrabio," Murtoza; "Rabijunco," Coimbra Museum.

The Pintail is rather commonly offered for sale in Oporto in some years from October to February.

184. Mareca penelope (Linn.). "Serafanada," Esmoriz; "Alfanado," Murtoza; "Piadeira," "Assobiadeira," Coimbra Museum.

The Wigeon is very common in the Oporto market from the beginning of October to March, and I have seen it at the mouth of the Douro.

185. Fuligula ferina (Linn.). "Catullo," Murtoza; "Tarrantana," Coimbra Museum.

The Pochard is very common in winter on the lagoon near Murtoza, but being much harried by the punt-gunners, it remains during the day in the open water. I have shot it on the lagoon at Esmoriz.

186. Fuligula cristata (Leach). "Negro," Murtoza; "Pêga do mar," Esmoriz; "Negrinha," "Negrella," Coimbra Museum.

The Tufted Duck is the commonest of all the family on the lagoons near the sea from October to March. Near Murtoza large flocks remain in the open water and go to feed on the rice-fields and streams.

187. Nyroca ferruginea (Gmel.). "Larro," Coimbra Museum.

In the Lisbon Museum there are specimens of the White-eyed Duck from the Ribatejo, and in the Coimbra Museum there are some from the banks of the Mondego. On the 6th January, 1883, my brother-in-law shot one and saw another at Esmoriz.

188. Clangula glaucion (Linn.).

In the Lisbon Museum there is a specimen of the Golden-eye from the Ribatejo.

189. Œdemia nigra (Linn.). "Negra," Povoa de Varzim, Oporto, Esmoriz; "Negrolla," Coimbra Museum.

The Scoter is very abundant in winter on the sea off the coast, appearing at the end of August and remaining till March or April. Immense flocks are to be seen near Lavadós, at the south side of the entrance to the Douro. The tail-feathers are often much frayed, probably from striking on the sand or stones at the bottom of the sea when tearing off shell-fish or when turning to rise to the surface.

190. Mergus serrator, Linn. "Serzeta," Murtoza.

The Red-breasted Merganser is occasionally offered for sale in the streets of Oporto in December, January, and February.

191. Columba palumbus, Linn. "Pombo torquaz."

Some Ring Doves are resident, as, for instance, at Arcos de Val de Vez, where they breed, but the majority are winter visitors. Near the mouth of the Douro they pass southwards from the middle of October to the beginning or middle of December, preferring an east wind for their journey. In winter very large flocks frequent the evergreen oaks in the Beira baixa and Alemtejo to feed on the acorns. At Castello branco I was told that at Penamacor they were doing so much damage in the oak-woods by eating the acorns which should have fattened the droves of pigs, that men were sent with guns and rockets to drive them away.

192. Columba œnas, Linn.

A few specimens of the Stock Dove offered for sale in the Lisbon market have supplied the Lisbon and Coimbra Museums.

193. Columba livia, Bonnat. "Pombo bravo."

Resident. I have found the Rock Dove nesting at the fine gorge at Cachão da Baleira, River Douro, just below S. João da Pesqueira, also at Cape Carvoeiro and Berlenga Island.

On the coast of Algarve, near Va. Nova de Portimão, I saw many large caverns scooped out of the cliffs by the action of the waves, and in these the Rock Doves nest in great numbers. In the neighbourhood of Mertola I was told that these birds nest in the galleries of the deserted manganese mines.

194. TURTUR COMMUNIS, Selby. "Rôla," Portugal; "Rola," Galicia, Spain.

The Turtle Dove is abundant in summer over the whole of Portugal, and is the dominant Pigeon of the country. They usually arrive at Oporto in the beginning of April, sometimes a little earlier, and leave from the latter part of August till the 20th September, a straggler or two remaining later. They may be heard cooing in my small wood of chestnut-trees, which is not far from the centre of the city of Oporto, and their note, with those of the Blackbird, Blackcap, Wryneck, Chaffinch, and other birds, gives a rural charm to the place. Immense numbers of Turtle Doves migrate south in the autumn along the coast of Portugal, preferring an east wind, and travelling in large and also small flocks, from 500 to 1000 yards from the sea. Should the wind be mild they fly very high, but if strong they sometimes almost skim the tops of the Indian corn. At the proper season of the year, as soon as the dry east wind begins to blow, the gunners collect in the early morning along the sea-coast to intercept the unfortunate travellers, and at Foz do Douro a continuous fusilade may be heard from shortly after sunrise until about 10 o'clock in the morning.

In reference to the migration, a friend caught one on the 24th September, 1878, in the Bay of Biscay. The light-house-keeper at Foz told me that sometimes Turtle Doves strike against the lantern at night, and one morning he found two lying dead under the lantern. If some take to travelling at night it is not surprising that birds are met with so far from land. After the morning flight the Turtle Doves feed in the fields during the day, or rest in trees, and as evening comes on a few make a short flight before sunset.

195. PTEROCLES ARENARIUS (Pall.). "Cortiçol."

In the Lisbon Museum there are four specimens of the Black-bellied Sand Grouse from Evora. They tell me at Abrantes that this bird is found on the elevated moors above Salvadorinho, and is very wary, but the gunners lie in ambush for them at their drinking-resorts.

196. PTEROCLES ALCHATA.

A specimen of the Pintailed Sand Grouse shot in October 1869 at Valladores, near Oporto, by Mr. Lawrence Fowke, Vice-Consul, is the only specimen, so far as I can learn, as yet met with in the north of Portugal. In the Lisbon Museum there are specimens from Evora and the Alemtejo.

197. CACCABIS RUFA (Linn.). "Perdiz."

The Red-legged Partridge is generally distributed, especially on the rocky sides of rivers and streams and the wide moors of the Alemtejo.

198. PERDIX CINEREA, Lath. "Charella," Pitões, Serra do Gerez.

In Portugal the Grey Partridge reaches the southern limit of its distribution. Like many other northern birds, it is found in Portugal only at those higher elevations which, as is now generally understood, correspond to a lower elevation in a higher latitude. I am informed that this Partridge is common and well known at Pitões on the Serra do Gerez, and it is also found on the high ground about Pinheiro, in the neighbourhood of Braga; I hear that it is found also on the Serra do Marão, and on the Serra de Rebordãos district of Bragança. The Lisbon Museum possesses a specimen from Benaventes.

199. COTURNIX COMMUNIS, Bonnat. "Codorniz," Oporto and Portugal generally; "Paspalhão," Valença, Aveiro; Bragança, also Galicia, Spain; "Calcaré," "Qualquaré," Braga; "Cracolé," Pedras Rubras, Mattosinhos; "Temtila," Penafiel; "Carcalhota," Coimbra.

Quails are to be met with abundantly nearly all the year round, except from October to November, when the greater number disappear. Their migration is by preference carried on during the prevalence of easterly winds, as in the case of the Turtle Doves; but Quails travel by night, preferring clear moonlight for their flitting. Going out one autumn with my gun in the early morning before sunrise, and while the moon was still shining, I saw a small flock of Quails pass from north to south.

There appear to be several races of Quails in this country. The largest is that which breeds in the corn-fields. It is light-coloured, lives in the midst of abundance, and is so fat in August that it sometimes appears scarcely able to fly, making an easy mark for the gun and a delicate morsel for the table. This disappears as the winter comes on, and its place is taken by a darker race, smaller and more active on the wing, called "Codorniz d'arribação," or migratory Quail. I am told that in the rushes at Ovar a small dark Quail is found, while at Alvito, in the Alemtejo, there is a small light-coloured Quail, which goes by the local name of "Codorniz creola," or the "Creole Quail," said to frequent the moors and to feed on the berries of the spurge laurel (*Daphne gnidium*). At some future time I hope to be able to collect further information about these interesting races, and, if possible, to obtain measurements.

200. Turnix sylvatica (Desf.). "Toirão do matto," Coimbra Museum.

I have seen specimens of the Andalucian Hemipode obtained at Esmoriz and Ovar, where, however, they are rather rare. They are said to be not uncommon in the Ribatejo. This is a bird of the south of Portugal.

201. Rallus aquaticus, Linn. "Pinta d'agoa," Oporto; "Frango d'agoa," "Fura matto," Coimbra Museum.

I have seen the Water Rail in the neighbourhood of Oporto from the beginning of November to the beginning of April, after which it disappeared from a small marsh where I used to put it up occasionally. The species is common in winter at Ovar, and I believe that many arrive in Portugal on passage. In the autumn of 1884 I was shown a Water Rail which had settled on a sailing-vessel in the Atlantic, about 240 miles off the coast of Portugal, while the vessel was on its voyage from Newfoundland to Oporto. It was much emaciated and died the day before the harbour was reached.

202. PORZANA MARUETTA (Leach).

I have seen specimens of the Spotted Crake obtained near Oporto from the middle of October to the end of February.

203. PORZANA BAILLONI (Vieill.).

In June 1882 I found, in a small marsh near Esmoriz, a nest of Baillon's Crake among the reeds, containing one fresh egg, and another nest containing an egg and a young bird just hatched. This latter was of a shiny black plumage, with a yellowish bill and greenish slate-coloured legs. It uttered a low piping cry, which was answered by the parent bird close by with *kek-kek-kek*. The nest was made of fine dry stalks of grass, and the bird when disturbed scuttled away like a water-rat along a narrow pathway leading from it. A friend shot two specimens at Estarreja on September 9th.

I have not yet met with the Little Crake, nor is there a specimen of it in either the Coimbra or the Lisbon Museum; but there is little doubt that it will be found in this country, and it should be looked for on passage in October.

204. CREX PRATENSIS, Bechst. "Pinta da herva," Oporto; "Codornizão," Coimbra Museum.

The Corn Crake is met with from the beginning of October till the middle of March, and is sometimes put up by the dogs when hunting for Quail.

205. PORPHYRIO CÆRULEUS (Vandelli). "Camão," "Gallinha sultana," "Alquimão," Coimbra Museum.

The beautiful Purple Gallinule is said to be common on the banks of the Mondego between Coimbra and Figueira, in the Foja and Arzila marshes, but so far these are the only localities where it has been met with.

206. Gallinula chloropus (Linn.). "Gallinha do rio," Anchora; "Franga marneca," Valença; "Franga do rio," Esmoriz; "Robocoelha," "Gallinha d'agoa," Ovar; "Rabello coelha," "Arriba coelha," Murtoza; "Rabilha," Angeja, Vagos; "Rabiscoelha," Coimbra.

The Moorhen is resident and abundant in suitable localities. I have found many nests at Esmoriz, Ovar, Estarreja, and Angeja. There is a beautiful perfectly white specimen in the Coimbra Museum.

207. Fulica atra, Linn. "Franga real," River Minho; "Negra," Esmoriz; "Nagera," Murtoza; "Galleirão," Coimbra Museum; "Gallo," Vagos, near Aveiro.

I have identified the Common Coot chiefly during the month of November, but I have also seen Coots on the lagoons during winter and summer, and on some occasions young ones, although I cannot say whether they were the Common or the Crested Coot. It will be interesting to learn whether one only or both of these species nest in this country. Dr. Carvalho informs me that the Common Coot nests in the marshes near Coimbra.

208. Fulica cristata, Gmel.

In October and November of 1882 many Crested Coots were hawked about for sale in Oporto, and were said to have been shot by the Murtoza gunners.

209. Grus communis, Bechst. "Grau," "Grulla," Vigo.

On February 13th, 1886, I saw from the train a flock of Cranes in a field near Beja, where they are said to appear from December to March and to do much damage in the bean-fields, eating the broad-beans out of their shells. In the Lisbon Museum there are specimens from Alcochete.

210. Otis tarda, Linn. "Abetarda," "Batarda," Coimbra Museum.

The Great Bustard is said to be not uncommon in the Alemtejo, and it is thence that specimens are obtained for the museums. I have not been fortunate enough to see the living birds in the open.

211. Otis tetrax, Linn. "Abatarda pequena."

The Little Bustard is rare in the north of Portugal. I have only heard of one shot at Vianna do Castello, two at Leça da Palmeira, some at Ovar, and I saw one killed at Estarreja while out Quail-shooting. Most of these were obtained during the month of August, but I saw one for sale at Oporto on the 8th October, 1881. The species is said to have bred at Bairro Miguel, near Alcoentra, Estremadura. In the Ribatejo and Alemtejo it appears to be commoner than in the northern part of Portugal.

212. Œdicnemus scolopax (S. G. Gmel.). "Alcarovão," Oporto, Caldas d'Aregos, Algarve; "Sizão," Oporto, Esmoriz; "Pirolé," Touça (Alta Beira); "Perlui," Esmoriz.

The Stone Curlew is one of the birds which arrive latest in this country: say from the middle of November, staying till the middle of February, being then common along the coast on sandy or stony heaths. Some nest on the sand-hills near Espinho, where I saw a nest containing two eggs, and I was told that it breeds near Caldas d'Aregos and in the Algarve. On the 25th of December, 1864, I shot one near Oporto as it flew in a southerly direction over my garden.

213. Glareola pratincola, Linn.

I am informed that there is a single specimen of the Pratincole in the Lisbon Museum, from the Ribatejo.

214. Charadrius pluvialis, Linn. "Dourado," "Pildra," "Pildra dourada," Oporto; "Tordeiro," Leça de Palmeira; "Douradinho," Tarambôla," Coimbra Museum.

The Golden Plover is an autumn visitant, arriving from the north in the beginning of October, and when the wind blows from the east numerous flocks pass near the sea-shore in a southerly direction. They are more numerous during this and the following month of November, most of them passing south, although some remain to winter here.

215. Squatarola helvetica (Linn.). "Pildra prata," Oporto; "Marrão," Esmoriz; "Tarambôla," Aveiro.

The Grey Plover usually arrives later than the preceding:

say during the months of November and December. The greater number leave in the spring, but some remain till very late. On the 17th May, 1882, I saw one at Esmoriz in summer plumage, and one also at the entrance to Faro harbour (Algarve) on the 6th of June, 1884, with the black breast of summer plumage. It was with a flock of Knots, which were also in summer plumage.

216. ÆGIALITIS CANTIANA (Lath.). "Borrêlho," Oporto, Ovar; "Colleira," Aveiro; "Curo-curo," Algarve; "Lavandeira," Coimbra Museum.

The Kentish Plover is resident and abundant along the coast of Portugal wherever it is sandy, and I have met with it from Caminha, at the extreme north, to Villa Real de Sto. Antonio. It breeds in May and June, laying three to four eggs on the bare sand. I have found many nests, and on one occasion caught a young bird, the legs of which seemed disproportionately long.

217. ÆGIALITIS CURONICA (Gmel.). "Corrião," "Corrição," Melres; "Carpido," Caldas d'Aregos; "Borrêlho," "Lavandeira," Coimbra Museum.

The Little Ringed Plover arrives near Oporto in the spring, and I have usually seen the first in April. On the 19th of June, 1878, I found a nest containing two eggs on a sandbank of a small island on the River Lima, near Vianna do Castello, and they also breed on the sand-banks of the river Douro above Oporto. In August many appear on the sandbanks at the mouth of the River Douro on passage, and a few stray ones remain till December.

218. ÆGIALITIS HIATICULA (Linn.). "Borrêlho," Oporto; "Lavandeira," Coimbra Museum.

The Ringed Plover is a winter visitant, first arriving about the middle of August at the mouth of the river Douro, and in September they are abundant. Large numbers pass the winter here, and I have observed them up till the end of March.

219. Eudromias morinellus (Linn.).

There is a single specimen of the Dotterel in the Lisbon Museum, obtained from Estremadura. I am not aware that any other has yet been obtained in Portugal.

220. Vanellus vulgaris, Bechst. "Ave fria," "Agoas neves," Anchora; "Pendro," Vianna do Castello; "Ave-toninha," Oporto; "Gallispo," Oporto, Penafiel, and Caldas d'Aregos; "Matoninha," "Verdizella," "Choradeira," Penafiel; "Galleno," Leça de Palmeira; "Galleirão," Esmoriz, Estarreja; "Redonzella," "Coin," Ovar, Estarreja; "Ave-coinha," "Donzella verde," Estarreja; "Abesconinha," Aveiro; "Abibe," Abecuinha," Coimbra Museum; "Vibora," "Bibes," Abrantes and Algarve.

No bird has a greater variety of popular names in Portugal than the Lapwing. Some are derived from its arrival coinciding with that of the cold weather, some from its erratic mode of flight, others from its crest-feathers, from the colour of its plumage, from its cry, and the Algarve name of "Bibes" is no doubt derived from the Moorish "Beebet." The Abrantes name "Vibora" means viper, and I cannot account for its being applied to a bird.

The first arrivals appear in October. During November great numbers pass southwards along the coast, preferring, as usual, an easterly wind. These birds usually fly nearly abreast in a long line at a considerable height. Many remain here to winter, disappearing in February or March, after which I have never seen one, although I have looked for them on the high moors of some of the serras and on the marshes in various parts of the country.

221. Strepsilas interpres (Linn.). "Rôla do mar," "Rôla marinha," Oporto; "Seixoeira," Aveiro; "Parda," Esmoriz; "Perna vermelha," Faro.

The Turnstone is usually seen near Oporto from the beginning of April till the middle of September, and they breed in this country. In the summer of 1869 a boy saw at Lavadóz, near the mouth of the Douro, two young birds and caught one of them alive, which I bought from him and kept for many months in a cage. It ate boiled rice, small pieces of biscuit, and cooked meat, was very tame and became quite familiar and affectionate, giving a short whistle of pleasure when it saw me and coming to feed from my hand. I took it with me to England to deposit it in that paradise for birds, the Zoological Gardens. One morning while the steamer was going up the channel between England and Ireland, the cage being on deck, a Whimbrel flew over the vessel. My Turnstone called, whereupon the Whimbrel responded, alighting on the deck close to the cage, when the sailors caught the latter without any difficulty and put it into the same cage with the Turnstone. They struck up a friendship at once, and the most extraordinary thing was that the Whimbrel at once became as tame as the Turnstone, taking biscuit from my hand without fear. It was curious to see the delight of the Turnstone at obtaining a companion. These are evidently very sociable birds. Wishing to observe the Turnstone's instinct for turning over stones, I put one into its cage, when it immediately began to turn it over and over, as if it expected to find something underneath. I left the two friends comfortably housed in a large aviary in the Zoological Society's Gardens, London.

I have seen this species in all the summer months. At Faro I was told that it breeds in the rushes (?) along the coast of the Algarve. During the months of August and September there is a large migration of these birds from north to south, and numbers arrive on passage at the mouth of the Douro. They travel by night, and during foggy weather may be heard constantly calling to each other.

222. HÆMATOPUS OSTRALEGUS. Linn. "Passa rios," Oporto.

The Oyster-catcher is generally seen on passage during the months of August, September, and October, and some few remain through the winter. The rocks north of Leça de Palmeira and the Leixoes rocks are a favourite locality for them, a few being seen every autumn at the mouth of the Douro.

223. RECURVIROSTRA AVOCETTA. "Frade," Setubal; "Alfaile," "Lovella," Coimbra Museum.

The Avocet is rare in the north of Portugal, but appears to be tolerably common in the south. A friend of mine shot one on a mud-bank near Ovar on December 4th. In the Lisbon Museum there are two specimens from the Ribatejo. On the 11th April, 1884, Dr. Hans Gadow and I fired simultaneously at a small flock settled on a sand-bank at the entrance to Faro harbour and bagged four specimens. I am told that they are common near Setubal.

224. HIMANTOPUS CANDIDUS, Bonnat. "Garrancho," Granjo, Esmoriz; "Esparella," Esmoriz; "Milhereu," Murtoza; "Trebilongo," Aveiro.

I have seen the Stilt Plover occasionally on the sand-banks of the river Douro in front of Campanhã, near Oporto, and I have shot a few at Esmoriz, in the month of May, on the sides of the lagoon, where I have seen them also in June. A man at Aveiro told me that he had found a nest with young there, but that they are not common. The bird is known also at Murtoza. In the Lisbon Museum are specimens obtained from the Ribatejo and Mafra. This is probably only a summer visitant, as I have never seen it in winter. At Esmoriz they were rather plentiful and were very noisy when they rose. In flying they stretch back their long slender legs, and at a distance look as if they were dragging straws behind them.

225. PHALAROPUS FULICARIUS, Linn.

A few Grey Phalaropes appear every year on our coast, usually from September to November.

226. SCOLOPAX RUSTICULA, Linn. "Gallinhôla."

Common, and in some specially suitable localities even plentiful, more so formerly than now. They usually arrive from the north at the end of October or beginning of November, and I suspect that they travel in small flocks, as it sometimes happens that about that time four or more Woodcocks are flushed from a small copse. I have seen neat round holes made in the comparatively hard clay of the pine-woods by this bird with its beak while searching for worms. In my collection I have a very light-coloured Woodcock of a buff shade. On February 26th sixteen Woodcocks were shot in a copse near Vallongo (near Oporto), which looks as though this was a flock on passage north. They have usually disappeared by the end of February.

227. GALLINAGO MAJOR (Gmel.).

The Double Snipe is said to have been shot once on a grassy knoll near the mouth of the Douro, and there is a specimen in the Lisbon Museum from the Ribatejo.

228. GALLINAGO CŒLESTIS (Frenzel). "Narcêja."

The Common Snipe is very abundant in suitable localities during winter, a few arriving as early as the middle of August, but the greater number from the middle to the end of September, becoming abundant by the month of November. They generally remain till the end of February or beginning of March. On one occasion, while out Snipe-shooting at Estarreja, I saw two Snipe rise simultaneously, one from each side of a low mound separating two rice-fields. They converged and cannoned in the air. I never saw this happen on any other occasion, although I have sometimes seen them springing up thickly on all sides. My largest bag of Snipe made near Leiria was twenty-four couple, and had I taken a larger supply of cartridges it might have been greater. This was in a small marsh with good cover, where the birds had not been much disturbed. In February they collect into whisps, previous to departing north. A friend once shot one with a lob-worm in its beak and gullet.

229. GALLINAGO GALLINULA (Linn.). "Narcêja gallega," Caldas do Gerez, Aveiro; "Serzêta," Aveiro; "Narsêja pequena," Coimbra Museum.

The Jack Snipe is not so common as the preceding, but is usually met with from November through the winter. It frequents the fine mud where a stream runs into a marsh, and in such a place at Ovar I have found the species rather numerous.

230. TRINGA ALPINA, Linn. "Maçarico," a name of general application for Sandpipers, Curlews, and allied birds.

The Dunlin sometimes arrives as early as the beginning of August, while the weather is still hot and some have not yet moulted the summer plumage. Its migration is carried on chiefly at night. Large flocks may be heard calling as they pass southwards at the end of August and during September, when they are very abundant on the sand-banks of the mouth of the Douro. Many winter here, returning north in February, and some few remain here through the summer; but I have never met with their nests, and am inclined to believe that these laggers are unpaired birds, as with Curlews and other Waders.

231. TRINGA MINUTA, Leisl.

Of the Little Stint the Coimbra Museum possesses a specimen and I have another.

232. TRINGA SUBARCUATA (Güld.).

The Curlew Sandpiper is not very common along this coast; I have a specimen obtained at the mouth of the Douro, where I have seen others.

233. TRINGA STRIATA, Linn.

Rather rare. The Purple Sandpipers which I have seen were shot near Oporto during the months of November and December.

234. TRINGA CANUTUS, Linn.

The Knot is a common winter visitant, some arriving by the end of August, but the main body appears during October, in which month they are more numerous than in winter, so it is to be surmised that many move further south for their winter-quarters. On the 5th of June, 1884, I shot near the entrance to Faro harbour, in the extreme south of Portugal, a Knot with the ruddy breast of summer plumage out of a flock of thirteen similar birds, and on the following day I saw another flock, also in summer dress. When Knots arrive from the north they have usually put on their grey winter plumage, yet I have seen some as late as the 10th of October with remains of the summer garb still on them.

Like the other Scolopacidæ, they are tame when they first arrive, but before they go back the winter residents have learnt to be wild.

235. Machetes pugnax (Linn.).

The Ruff is not very common here. My notes mention its appearance in September, February, and March.

236. Calidris arenaria (Linn.).

The Sanderling arrives at Oporto in the month of August, and is then common; I have seen it also in September and November.

237. Totanus hypoleucus (Linn.). "Lavadeira," Monte Môr o velho.

The Common Sandpiper is abundant at the mouth of the Douro from August to the end of October, and I have seen a straggler as late as the 4th of December. At Leça de Palmeira creek, about three miles further north, they arrive with great regularity between the 17th and 20th July. Some pairs nest on the river Minho, where, on the 8th of June, 1882, I found a nest containing four eggs on a small islet on the Spanish side, above Caldelas de Tuy. I saw the bird fly off the nest, which was on the dry mud under a willow shrub and was lined with a few stalks of grass. On the following day I found another containing four eggs on an islet on the Portuguese side of the same river. The bird flew off the nest close to my feet, and as it settled on a mud-bank close by, I had a good opportunity of identifying it through my field-glass. This nest was lined with dried grass and a few leaves. Several other pairs were seen during the same visit. The Common Sandpiper will probably be found to breed also on the rivers Lima and Douro. As the migratory movement begins as early as the middle of July, it cannot be the lowering of the temperature that induces it to travel, as from that time till the middle of August is usually the hottest part of the year in this country. It is partial to muddy banks more than sand, and also to stones covered with green weed. Dogs have a dislike to retrieve this bird on account of the strong acrid smell from the plumage. The name

"Lavadeira" comes from its habit of bobbing up and down, as a washerwoman does when soaping and scrubbing clothes at the river-side.

238. TOTANUS OCHROPUS (Linn.). "Passaro bique-bique," Estarreja; "Bite-bite," Murtoza.

The Green Sandpiper is a common winter visitant, arriving in September, and I have seen it during the months of October, November, and December. A favourite locality is the muddy ditches cut for draining the swampy ground at Esmoriz, Ovar, and Estarreja. Like its relative, this bird has a strong scent repulsive to dogs. It springs up rather like a Snipe, and is apt to draw on it a snap-shot, unless it utters its shrill noisy piping soon enough.

239. TOTANUS GLAREOLA (Linn.).

In November 1883 the Coimbra Museum received two specimens of the Wood Sandpiper from Estarreja.

240. TOTANUS CALIDRIS (Linn.). "Fusello," Aveiro.

The first arrivals of Redshanks are at the end of July, and in August many flocks are to be seen at the mouth of the river Douro, preferring the muddy parts. They remain at Oporto only a short time, their favourite haunts being the muddy salt-pans of Aveiro, where they are to be found plentifully during the winter, and are a great nuisance to the duck-punters from their noisy and vigilant habits.

241. TOTANUS FUSCUS (Linn.).

There are specimens of the Spotted Redshank in the Lisbon Museum.

242. TOTANUS CANESCENS (Gmel.).

The Greenshank appears occasionally at the mouth of the Douro. On April 11th, 1884, I shot one on the lagoon at Faro, where some more were seen on the same occasion.

243. LIMOSA LAPPONICA (Linn.).

The Bar-tailed Godwit has been observed by me during the months of August (4th), October (several times), December, March (8th and 27th), May (21st), and doubtfully on the 4th of June. That seen by me on the 4th of August, 1878, had the rufous breast of summer.

244. Limosa belgica (Gmel.).

The Black-tailed Godwit is occasionally obtained at Aveiro in February and March. The Coimbra and Lisbon Museums possess specimens—the former from Foja, the latter from Ribatejo.

245. Numenius phæopus (Linn.). "Meio maçarico," "Maçarico gallego," Oporto; "Sovella," Murtoza.

Great numbers of the Whimbrel arrive at Oporto in the month of August, and during foggy nights may be heard calling to each other till late as they fly southwards. The majority of the Whimbrels pass on, a few remaining during the winter months. In March and April the migration northwards takes place, and at this time of the year I have seen flocks on the journey along the sea-coast during the daytime. In May I saw large flocks at Esmoriz, and a few stragglers at the mouth of the Douro even during the months of June and July; but I have never met with any indications of its breeding in this country, nor have I found it on the tablelands of the serras in summer.

246. Numenius tenuirostris, Vieill.

A specimen of the Slender-billed Curlew is in the Lisbon Museum obtained from the Ribatejo.

247. Numenius arquata (Linn.). "Maçarico real," Oporto, Anchora, &c.; "Gruau," Murtoza; "Perolico real," Cies Island, Vigo, Galicia.

The Curlew arrives in August and following months, winters here, and migrates north in the spring. A straggler may occasionally be seen in the summer months. On the 6th June, 1884, I saw a flock of six at Faro.

248. Sterna fluviatilis, Naum.

Some specimens of the Common Tern appear on our coast during the autumn migration.

249. STERNA MINUTA, Linn. "Churêta," Vianna do Castello; "Chilreta," Oporto; "Grazina," Aveiro; "Garajau," Faro; "Charrano," Tavira.

I have seen the Little Tern from May till the end of August. Many nest on the sand-dunes of the Costa de S. Jacintho at the entrance to Aveiro, where I have taken their eggs; also at the entrance to Faro harbour.

250. STERNA ANGLICA, Mont. "Chagaz," Ovar; "Tagaz," Aveiro.

The Gull-billed Tern nests on the sand-dunes between the Aveiro lagoon and the sea near Torreira, whence I have received eggs and bird. I saw numbers flying about near Aveiro bar in the beginning of June.

251. STERNA CANTIACA, Gmel. "Garajau," Oporto, Algarve; "Garau," Esmoriz; "Gaivina," Peniche; "Garão," River Tagus; "Gavito," Quarteira.

The Sandwich Tern passes on migration in August and September, but some winter here and move north again in April. I have seen them in May, and on the 3rd of June, 1884, I shot one at Quarteira in the Algarve.

252. HYDROCHELIDON HYBRIDA (Pall.).

I have seen the Whiskered Tern in spring several times near Avintes on the river Douro, about two miles above Oporto, and it is almost sure to breed in the marshes of this country. I did not meet with it in summer on the marshes edging the Ovar-Aveiro lagoon. In the Coimbra Museum there are specimens obtained during the summer months.

253. HYDROCHELIDON NIGRA (Linn.).

The Black Tern has been seen by me during the months of May, August, and September. It is probable that this species will be found to nest in Portugal, as is the case in Spain.

254. LARUS RIDIBUNDUS, Linn. "Gagosa," Aveiro; "Chapalhêta," River Guadiana.

The Brown-headed Gull is abundant, arriving on migration towards the end of October or beginning of November, by which time it has lost its summer plumage, large numbers remaining through the winter. Early in March some already begin to change to summer plumage, and by the beginning of April nearly all have the black head and rosy tinge of their summer plumage, and gathering in large flocks exercise themselves in evolutions over the river Douro and take their departure. It is possible that some breed in this country. I saw one at Caminha on May 6th, 1880; some on the river Guadiana, near Villa Real de Santo Antonio, in June 1884; also some in Vigo Bay, June 3rd, 1882, but these may possibly have been *L. melanocephalus.* I have read that in the Zoological Society's Gardens, London, it was noticed that a captive *L. ridibundus* changed from white to black plumage on the head by the gradual growth of the white feathers into black, the white tips falling off; but my observations do not agree with this. Having obtained specimens in all stages of changing from the white to the black head, I find that the black feathers are new ones, and may be seen springing up already black in their sheaths among the white feathers. It would be interesting to mark some of these birds before departure in such a manner as to render it conspicuous in its summer home, as, for instance, by dyeing one of the wings or painting a coloured stripe across it and stamping the address on the wing or tail-feather, so that any one catching it might communicate the capture. This would enable us to trace the route of migration.

255. Larus melanocephalus (Natt.).

In February 1882, Dr. Carvalho wrote me that among other specimens which had arrived for the Coimbra Museum was a young Adriatic Gull.

256. Larus minutus, Pall.

I saw a Little Gull with a black cap on the river Douro among some Brown-headed Gulls, and on account of its diminutive size I could not well have mistaken any other species for it.

257. Larus argentatus, Gmel. "Gaivôta," Vianna, Oporto, &c.; "Falcoeira," Aveiro.

The Herring Gull is resident in Portugal, breeding on the

Berlengas Islands, where I obtained eggs in 1879. No doubt much larger numbers must have bred there formerly, but they are now much harried by the pensioners on the old fort there and fishermen, who eat the eggs. This Gull also nests on the Cies Islands, Vigo. They are very numerous at the entrance to the Douro, except during the breeding-season, when they disappear, leaving only some young birds of the previous year in their dark plumage, which remain through the summer.

258. Larus argentatus cachinnans.

Dr. Carvalho writes me that there are two specimens of the Mediterranean Herring Gull in the Coimbra Museum.

259. Larus fuscus, Linn. "Gaivôta das azas negras," Lisbon Museum.

Common in winter along our coast. The Lesser Black-backed Gull associates with the Herring Gull, and I look upon it as its northern representative. The first usually arrive about the beginning of August and winter with us, some remaining till the end of April, and a few stragglers till summer. I did not see this species on the Berlengas or Cies Islands.

260. Larus marinus, Linn.

The Povoa fishermen sometimes catch the Greater Black-backed Gull out at sea and bring it alive for sale in Oporto to clear the gardens of snails and slugs and insects. Other Gulls also are brought for the same purpose. There are specimens in the Lisbon Museum.

261. Rissa tridactyla (Linn.).

The Kittiwake Gull is also brought in winter by the Povoa fishermen for sale. There are specimens of it in the Lisbon Museum.

262. Stercorarius pomatorhinus (Temm.). "Mandrião," "Saragossa," Oporto; "Moleiro," "Medonho," Povoa de Varzim; "Sabão," Estmoriz; "Cagado," Povoa de Varzim, Ovar, Faro; "Palheira," Cies Islands, Vigo.

The Pomatorhine Skua appears in the beginning of September and through the winter months, persecuting the smaller Gulls.

263. Stercorarius crepidatus (Gmel.). "Cagado," Povoa de Varzim.

I shot an Arctic Skua at the mouth of the Douro on the 28th of August, 1880, and have seen others flying.

264. Stercorarius parasiticus (Linn.).

Dr. Carvalho writes me that the Lisbon Museum has eleven specimens of Buffon's Skua obtained at Cascaes near Lisbon. I think I saw some of these birds at sea near Oporto.

265. Procellaria leucorrhoa, Vieill.

The Lisbon Museum has specimens of the Fork-tailed Petrel from Setubal, Santarem, and Coimbra; and the Museum of the latter has received many from Cape Mondego.

266. Oceanites oceanicus (Kuhl). "Chasquillo," Oporto.

There are two specimens of Wilson's Petrel in the Lisbon Museum, received from Cascaes.

267. Puffinus anglorum (Temm.). "Furabuxo," "Chirêta," Oporto.

In the Lisbon Museum there is a Manx Shearwater obtained at Cascaes. On May 20, 1879, when going in a boat from Berlengas Islands to Cape Carvoeiro, I saw a flock of birds which the fishermen called "Furabuxos," one of which I dropped with a charge of shot from my collecting-gun; but before we could put the boat about it rose again. They looked to me like small Shearwaters, and may possibly have been this species. I did not hear of their breeding on Berlenga or on Cies. The Povoa fishermen, whom I have cross-questioned about the Manx Shearwater, know it well, and tell me that it is an excellent diver. In all probability it is a winter visitant.

268. Puffinus griseus (Gmel.). "Pardella preta," Povoa de Varzim.

The Sooty Shearwater is sometimes met with on this coast and is known to the fishermen. The only specimen as yet procured in this country is in my collection, and was obtained off Mattosinhos, near Oporto, during the autumn. Professor Newton informs me that this South Atlantic species had not been known previously from the coast of Portugal.

269. Puffinus major, Faber. "Pardella de bico preto," Oporto.

The Great Shearwater arrives on the coast of Portugal in the beginning of September, is plentiful in October and November, and is said to disappear during December; but the fishermen's accounts, are rather confusing and contradictory on this point. Those which I have were obtained in October and November, when large numbers are brought in by the fishing-boats. I have not heard of them during the spring, but it is probable that the movements of these birds are almost entirely influenced by those of the shoals of sardines and other small fish.

270. Puffinus kuhli (Boie). "Pardella de bico branco," Povoa de Varzim; "Maranhona," "Moira," "Pardillão," Oporto.

I found the Mediterranean Shearwater nesting in holes under large stones on the north-east side of Berlenga Island, in 1879, at the end of May, laying one large white egg. The majority lay in June. A bird which I assisted to catch on the nest bit and snapped fiercely with its hooked bill, making at the same time a huffing noise, reminding me of the similar noise made by Pigeons under same circumstances. This and some other points of resemblances lead me to suspect that the affinity between the Shearwaters and Pigeons is closer than would appear at first sight, and I am not aware that it has received the attention it deserves. Professor Huxley has placed the orders Columbæ and Tubinares under the Schizognathæ.

The difference between this species and *P. major* is well known to the Povoa fishermen. They say that *P. kuhli* has more feathers and its flesh is drier. It is quite natural that the northern species should have more fat. I do not know whether *P. kuhli* remains here through the winter, as is probable.

The Shearwaters are very useful to the Portuguese fishermen, as they indicate by their presence the neighbourhood of the sardine-shoals, and also contribute to the general stew-pot. They are caught by trailing after the boat, along the surface of the sea, a line baited with a sardine. It is usual to skin these birds before adding them to the pot, and the fishermen say they are fat, and consider them a great delicacy. *P. major* is said to be better eating than *P. kuhli*, as it is fatter and tenderer. They generally keep well out to sea, and approach nearer the coast during rainy weather with southerly winds.

271. ALCA TORDA, Linn.

There is a specimen of the Razorbill in the Lisbon Museum obtained from Cesimbra. On the 23rd of January, 1872, I bought two specimens hawked for sale at Oporto, said to have been shot on the Ovar-Aveiro lagoon.

272. LOMVIA TROILE (Linn.). "Arau," Vianna do Castello, Oporto, Vigo; "Airo," Berlenga Island; "Carólo," Vigo.

The Common Guillemot is abundant along the coast of Portugal. It breeds on the Berlenga Islands, chiefly on the large rock O' da Velha. There is every probability that it is resident. On the 29th of December, 1881, I saw for sale at Oporto a Guillemot of the variety *L. lachrymans*; and in the Lisbon Museum there are nine specimens from Cascaes bay; in fact the only specimen not *L. lachrymans* is from Peniche. I saw Guillemots on the 4th June, 1882, in the neighbourhood of Cies Islands, and it is pretty certain that they breed on the rocky coast of Galicia.

273. FRATERCULA ARCTICA (Linn.). "Papagaio do mar," Oporto.

The Puffin appears sometimes in the winter months off our coast, and I have a specimen with the winter bill. Mr. Howard Saunders informs me that passing in a steamer he saw large numbers of Puffins off the Berlengas Island early in June 1868; but I heard nothing of their breeding there during my visit, and they could not have escaped the notice of the lighthouse people.

274. Colymbus glacialis, Linn. "Mobelha," Murtoza, Vigo.

The Great Northern Diver is a regular winter visitant to Portugal, and is well known on the lagoon at Aveiro, Murtoza, &c. I have seen specimens obtained in the months of November, December, and January, and there are some in the Lisbon Museum from the Tagus. On the 30th January, 1884, I saw a specimen near the Lazaretto at the head of Vigo Bay.

275. Colymbus arcticus, Linn.

A specimen of the Black-throated Diver is in the Lisbon Museum.

276. Colymbus septentrionalis, Linn.

There are three specimens of the Red-throated Diver in the Lisbon Museum, one of which came from Albufeira. I have seen Divers in the Douro, probably this species.

277. Podiceps cristatus (Linn.).

In December 1871 I bought three young Crested Grebes which had been shot on the lagoon between Ovar and Estarreja at Murtoza. Two specimens from Albufeira are in the Lisbon Museum.

278. Podiceps nigricollis. "Cagarraz," Lisbon Museum.

I have an Eared Grebe from the Ovar-Aveiro lagoon; and there are four specimens in the Lisbon Museum, of which one is from Ribatejo and three are from Albufeira.

279. Podiceps fluviatilis (Tunstall). "Fundujo," Valença do Minho; "Mergulho," Esmoriz; "Mergulhão," Ovar, Aveiro, &c.

The Little Grebe is resident, and very abundant on the Ovar-Aveiro lagoon, chiefly in winter. The country people tell me that it nests along the sides of the streams and among rushes.

XL.—*On new Species of Central-Asian Birds.* By General N. M. Prjevalsky*. (Translated from the Russian by E. Delmar Morgan.)

Since the publication in 1876 of 'Materials for the Avifauna of Mongolia and the Tangatan country'†, containing my ornithological observations during my first journey in Central Asia, I have accomplished three more journeys in that country. One of the chief objects of my special investigations during these Explorations was, as before, ornithology, and a mass of observations was obtained on the birds of this wide and almost unknown tract of Asia, where I found altogether 430 species.

The periodical repetition of my journeys, the preparation of geographical reports, and other occupations have prevented my undertaking the special elaboration of the materials collected, and have obliged me to defer this work to a more favourable opportunity. Even now I can only describe the new species of birds found during my second, third, and fourth journeys. Of these there were nine; but it is very possible that upon a more careful study of the materials collected some more novelties which escaped notice on the hurried glance through the collection may be found. The new species of birds found on my first journey numbered twenty, which were described in the above-mentioned work. On all four journeys about 5000 specimens of birds were collected, and these have been transferred to the Museum of the Imperial Academy of Science.

I deem it my duty to express my sincere acknowledgments to the learned Curator of the Zoological Museum of the Imperial Academy of Science, F. D. Pleske, for his obliging assistance in the present work.

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* [Read at a Meeting of the Physico-Mathematical Section of the Imperial Academy of Science, St. Petersburg, on the 13th January, 1887. We are much indebted to Mr. Delmar Morgan for enabling us to give this early account of so many novelties.—Edd.]

† [The ornithological part of General Prjevalsky's first work on Mongolia was translated by Mr. Carl Craemers for Rowley's 'Ornithological Miscellany,' vol. ii.—E.D.M.]

1. **Leptopœcile elegans**, sp. n.

Mas: vertice et occipite pallide violaceo-cinereis, fronte pallidiore; crista alba; loris nigris; genis, superciliis, collique partibus postica et laterali castaneis. Dorso cyanescente-olivaceo; scapularibus brunnescente-olivaceis, uropygio cæruleo; gastræo toto cinnamomeo, abdomine pallidiore, lateribus violaceo tinctis. Remigibus, rectricibusque fuscis, pallide cæruleo marginatis.

Fem: capitis parte superiore sordidiore quam in mare; crista breviore; loris maculisque nuchalibus nigris. Striis superciliaribus angustis nigro-castaneis. Collo postico rufescente-olivaceo; dorso scapularibusque fuscescentioribus. Uropygio cyanescente-olivaceo; genis cinerascentibus; gula pectoreque sordide albis, abdomine rufo tincto, lateribus rufescente-violaceis. Remigibus rectricibusque ut in mare, marginibus rectricum magis olivaceis.

Dimensions in millimetres:—

	Length*.	Expanse.	Closed wing.	Tail.	Culmen.	Tarsus.
♂....	104–112	152–165	53–55	48–55	9·0	19·5–20·5
♀....	104–110	158–165	54–56	46–49	9–10	20

Of the primaries 5=6 are the longest, the 4th being only a little shorter, and sometimes of equal length; 3=8; 2<10; the 1st is not quite double the length of the upper coverts. Bill black; eyes red; tarsus dusky red, toes and claws darker.

Male. Upper part of the head pale lilac-grey; the forehead paler; gape black. On the nape of the neck is a white tuft about 10 millim. longer than the nearest head-feathers. The narrow superciliaries, cheeks, lores, sides and back of neck chestnut-coloured. Tail-coverts azure-blue, with reddish or dusky-olive tips; upper tail-coverts pale azure-blue. The blue tinge on the back is likewise paler and mingled with dusky olive. Shoulders dusky olive. Throat and breast light chocolate, paler on the belly; flanks and under tail-feathers chocolate with violet tinge. Tail and wings brown; rectrices and primaries with pale blue margins;

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* The measurements taken were from the point of the bill to the end of the tail: from freshly killed birds.

secondaries and upper tail-coverts with dusky-olive margins. Lower wing-coverts and feathers underneath the shoulders the same colour as the belly.

Female. Crown of the head dark lilac-grey; forehead paler; the white or lilac-white tuft on the nape half the length of that in the male; along the sides of the crown are broad black bars united by narrow rusty black superciliaries with the black lores. Back of the neck rusty olive; back, shoulders, wide margins of the inner primaries, and upper wing-coverts dusky olive. Upper tail-feathers greyish olive with reddish tips. Sides of neck, throat, and breast dirty white; cheeks and ear-coverts greyish with olive tinge; abdomen rufous; lower tail-feathers paler than those of the male; flanks reddish violet behind. Tail and wings same as the male, except that the margins of the rectrices are paler.

This beautiful Tit was first discovered by me in April 1880, on the Upper Hoang-ho, to the south of Koko-nor lake, and was afterwards seen by our party in February 1884 in the mountain-forests near the temple of Chertinton, north-east of Sining. On my first journey in 1872–73 we did not find this species. In a word, *L. elegans* is distributed throughout the whole of the hilly country in the basin of the Upper Hoang-ho, where it appears to be restricted to the coniferous and spruce-forested mountain-belts and defiles ranging from 7,500 to 11,000 feet above sea-level. It is not a rare bird, and associates with *Pœcile affinis*, or more often with *Regulus himalayensis*, with both of which it has much in common in character and habits. Like them it flits from tree to tree, constantly clinging to the boughs in search of insects' eggs, its winter food. In general *L. elegans* is an active, restless bird, and by no means shy. Its note is a feeble whistle, at times a chirrup like that of the Wren. At the end of April the paired birds build their nests, which are probably lined with the downy covert-feathers of *Crossoptilon auritum*, for I have several times watched this bird dragging one of these feathers and overpowered in so doing by a strong wind; but we were not so fortunate as to find a nest or obtain young birds.

2. LEPTOPŒCILE OBSCURA, sp. n.

L. sophiæ simillima, sed minor, gastræoque toto unicolore.

Dimensions.	*L. obscura* *, ♂.	*L. sophiæ.*									
		From the Thian Shan †.	From Kan-suh.	From the Koko-nor Mountains.	From the Sources of the Yellow River.	From Tsaidana.	From the Altyn-tagh.	From Russian Range ‡.	From the Tarim.	From the Aksu Oasis.	From the Southern slope of the Thian Shan (R. Habtsa-gai-gol).
Length	110	124	114–118	...	...	...	118	...	...	...	110–115
Expanse	?	♂ 153	143-150	...	...	...	...	...	...	...	140–143
Folded wing (or closed)	50	51	49–52	52	50	53–54	50	50	49	51	51
Tail	51	55	54-57	57	55	53–57	54	54	54	57	57
Culmen	8·5	9	8·3	8·3	8·3	9	8·5	8·5	8·3	8·5	8·0–8·5
Tarsus	18.5	?	19–21	19	19	20–21	19	20	20	20	20

Proportions of primaries the same as in *L. sophiæ*; culmen black; eyes? (The eyes of *L. sophiæ* from Kansuh are red.) Tarsus dark fulvous colour.

Male, in well-worn summer plumage (killed in June). Crown of head rufous-chestnut; head and supercilia ochraceous white; gape black; nape, back, and shoulders dusky olive; tail-coverts bright violet-blue. Cheeks, sides of neck, all the abdomen, flanks, and under tail-feathers rufous cinnamon, with bluish-violet tipped feathers, like the tail-coverts, brighter towards the hinder part of the flanks. Wings fulvous, with greenish marginal feathers and rufous margins on the posterior quills and larger upper coverts; lower wing-coverts greyish white, with reddish tips, much worn in the specimen described. Rectrices dusky black, with greenish-grey margins; outer web of rectrices white.

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* We have only three specimens of *L. obscura* in our collection—two young males and one old, the diagnosis being made from the last.

† According to Severtzow: 'Vertical and Horizontal Distribution of the Fauna of Turkestan,' p. 135.

‡ In this specimen the outer web of three pairs of rectrices is white, and the proportion of the quills is different, one wing being unfortunately broken; and in another, killed in May, the feathers were perhaps not fully grown.

Young males in fresh summer (June) plumage have less brilliantly coloured tail-coverts, paler abdomen, dark-fulvous quills, and black rectrices. We did not obtain a female.

This species was only discovered on my fourth journey into Central Asia, in North-eastern Thibet, in the mountain-forests on the Upper Blue River (Yang-tse-Kiang, or Dy-chu), at a height of 13,000 to 14,000 feet. Its habits are not distinguishable from those of *L. sophiæ* (which inhabits the neighbouring basin of the Upper Hoang-ho, but is not found on the Upper Yang-tse Kiang); and it likewise mostly frequents the thickets of the alpine zone; whereas *L. elegans* is confined to the forests on the lower belts of the mountains.

Here let me say of *L. sophiæ* that this species, first discovered in the Western Thian Shan by our well-known zoologist and explorer, the late N. A. Severtzow, was met with on all four of my journeys in Central Asia—in the Thian Shan, in the basin of the Tarim, in the Russian Altyn tagh and Nan-shan ranges, in Tsaidam and its neighbouring mountainous Tibetan border-land, lastly in the basin of the Upper Hoang-ho and on Lake Koko-nor. In these last localities—in the mountains of Kan-suh (along the Tatung-gol), Koko-nor, and on the Upper Hoang-ho, south of this lake, similar in climate and other physical conditions to the forested parts of the Thian Shan—the specimens of *L. sophiæ* obtained by us are not distinguishable, on comparison, from the typical specimens brought home by Severtzow, and have the same deep colouring both of the dusky as well as of the ultramarine feathers. The seventeen specimens obtained by us in the region intervening between the basin of the Upper Hoang-ho and the Thian Shan (including the southern treeless slope of this last-mentioned range, in fact in extremely arid, desert tracts) have a pale coloration, especially of the ultramarine feathers of the tail-coverts, throat, breast, and flanks. In size and other respects the paler are not distinguishable from the darker specimens. This pale variety, however, has been made into a separate subspecies by our celebrated ornithologist Dr. M. Menzbier, and described by him in 'The Ibis,' 1885, p. 353, under the name of *L. sophiæ*, var. *major*.

In habits *L. sophiæ* is non-migratory, and chiefly belongs to the mountains, where it may be met with in the various ranges of its distribution at heights varying between 3,000 and 13,000 feet of absolute elevation. In the oases at the foot of the Thian Shan, such as Ak-su and Utch-Turfan, this little bird is common enough, but in the wide expanse of plains along the Tarim and in Tsaidam it is rare. It only frequents thick copses, whether of barberry, willow, wild rose, or tamarisk, in the defiles of the southern slopes of the Thian Shan; or the thickest shrubberies of rhododendron, *Caragana jubata*, *Potentilla*, and *Salix*, in the alpine zone of the Kan-suh mountains; or, lastly, thickets of *Myricaria*, kharmyk, and tamarisk in the defiles of the Tibetan mountains bordering Tsaidam and the Tarim lowlands. In the forested belts of mountains, as already stated, it lives chiefly in the alpine zone of underwood, and only occasionally descends to the lower wooded region along defiles of mountain-torrents. It is a nimble climber in underwood and a swift runner. Its note is a feeble whistle. In the alpine zone of the Kan-suh mountains *L. sophiæ* is frequently met with; usually in small flocks, associated with *Pœcile superciliosa*.

In the forests of the Upper Hoang-ho, notably on Mt. Jakhan-fidza, I found one of its nests on the 16/28 April, 1880, quite ready, but as yet empty. This nest was suspended, at a height of about 7 feet, from a branch of juniper, another supporting it below; it was formed of moss, sheep's-wool, and down from the flowers of the willow, lined with the downy coverts of *Crossoptilon auritum*. In shape it was round like a ball, 5 inches in diameter, with a narrow opening above.

3. ACCENTOR KOSLOWI, sp. n.

This species may be referred to that group of Accentors to which belong *A. modularis orientalis* and *A. rubidus fervidus*, but differs from these in not having striated ear-coverts—a distinction which might separate it into a special subgroup.

Notæo toto brunnescente-fulvo, longitudinaliter sordide brunneo maculato; uropygio concolore. Pectore abdomineque fulvescente-albis ; corporis lateribus longitudinaliter brunneo maculatis ; gula pallide fusca ; regione parotica haud striata. Marginibus tectricum alarum duas fascias pallidas transversas fingentibus. Femina mari simillima.

Dimensions :—

	Length.	Expanse.	Closed wing.	Tail.	Culmen.	Tarsus.
♂	155	219	68–74	67–72	9–11	19–20
♀	148–155	211–214	68	68	10	20

The 1st primary is a little shorter than the upper coverts; 2 > 7; 3rd, 4th, and 5th are the longest and equal; 6th is only a little shorter than these. In the tail the outermost pair of rectrices are 4–6 millim. shorter than 4th = 5 > 6.

The bill is black, the base of the mandibles light horny; feet flesh-coloured, nails dark horny. Eyes light hazel.

In winter plumage, four males, one female, and two of doubtful sex have the upper part of the head and body yellowish light brown, with blackish spots on the shafts, more distinct on the back and less so on the nape and head. On the forehead these spots merge into a general light-brown colour; upper tail-feathers spotless, except occasionally on the longest of the upper tail-coverts. The throat is a smoky brown, in the lower part with whitish tips, not worn off in December and January, forming an indistinct half-collar on the neck; ear-coverts are the same dusky brown, but with no bars on the shafts; neither are there superciliaries. The underparts are yellowish white, with a brown tinge on the breast, reddish on the flanks, where the posterior feathers have dark bars on the shafts; lower wing-coverts rufous white, without spots. Rectrices, quills, and upper wing-coverts brown, with tawny margins, wider on the hinder quills and wing-coverts. Yellowish-white tips on the greater and median coverts form two narrow bars on the wing. Under wing-coverts brownish red.

The female is not distinguishable in plumage from the male.

This species, named by me after the valued coadjutor and companion of my fourth journey in Central Asia, P. K. Koslow, was first met with in December 1883 on the road from Urga to Ala-shan. We then obtained only one specimen; but in January 1884 we found this species sufficiently numerous in the Central Ala-shan, in a small but almost barren group of mountains near the wells of Shanghin-dolai; and we once observed it in the sands of Tyngeri, in Southern Ala-shan. It is generally rare in the Gobi, where it doubtless only winters. It probably nests in Southern Siberia and in the wooded mountains bordering on the Gobi, such as the Ala-shan and Munni-ula ranges. Its note in winter is very like a whistle. We did not find *A. koslowi* in any other part of Central Asia except the Gobi; but a specimen of the same species was sent to the Museum of the Imperial Academy of Sciences by M. Beresowsky, who obtained it in December in the environs of Kobdo, in South-western Mongolia.

4. BUDYTES LEUCOCEPHALA, sp. n.

Mas: capite albo: cervice colloque postico cinereo tinctis. Dorso, scapularibus, uropygio, supracaudalibusque flavescente- vel virescente-olivaceis; gula, pectore, abdomine, lateribus corporis et subcaudalibus intense flavis. Alis duabus fasciis transversis flavescente-albis ornatis. Duabus rectricibus, utrinque externis, albis, parte inferiore pogoniorum internorum nigro marginata.

The description is made from two full-grown males; we did not obtain a female.

Of the primaries 1 = 2, the longest; 3rd is only a little shorter. The bill and feet are black; the eyes dark hazel.

Male. Forehead, crown, ear-coverts, cheeks, lores, and chin white; back of the head and nape whitish grey (in the younger male they were leaden grey, extending also to the crown). Throat, breast, abdomen, and flanks, as well as under tail-feathers, bright yellow. Upper part of the body yellow or greenish olive; only the front upper tail-coverts show a dark-brown colour. Primaries dark brown, with yellowish margins, wide on the hindermost. The yellowish-white tips of the large and median wing-coverts form here two bars. The lower wing-coverts are yellowish white. Rectrices darker than the quills; in fact almost black, except the two outermost pairs, which are white, with a black edge, extending from the base to two thirds of the inner web, and with a narrow black stripe in the basal half of the secondaries; a white speck on the point of the third rectrix. A younger male had hardly any spot here and more black on the white rectrices.

This Wagtail was first discovered by us in the spring of 1879 migrating in Dzungaria, on the Urungu river, and in the Southern Altai. The first arrivals were observed on the 15/27 April, but they may have appeared a few days earlier. They kept in small flocks, from five to ten individuals in each, and were frequently seen. In May they ceased to appear, neither did we find them in any other regions visited by us.

There is, however, an entry in my diary to the effect that on the 31st August (12th September) of the above year, 1879, this species was observed apparently in autumnal flight, on lake Toso-nor in Tsaidam.

5. LANIUS GIGANTEUS, sp. n.

Maximus. Notæo toto sordide cinereo ut in *L. meridionali*; gastræo albo, pectore abdomineque rosaceo tinctis; loris regionibusque paroticis nigris; secundariis apice albis, speculo basali nullo. Scapularibus albis; tectricibus minimis alarum superioribus cinereis, inferioribus omnibus albis. Cauda gradata; rectricibus duabus mediis nigris, extimis, interdum et secundis, albis, reliquis apice albis.

Dimensions:—

	Length.	Expanse.	Closed wing.	Tail.	Culmen.	Tarsus.
♂	321	432	140	173	20	34
♀	303–312	414–435	135–141	157–166	20	33–34

Tail strongly barred; outermost rectrices shorter by 49–57 millim. than the median and longest. Bill and feet black; eyes dark hazel. Coloration very similar to that of *L. meridionalis*.

Male. Head and upper part of body dark grey, but lighter on the tail-coverts. All the abdomen white, with a rose tint on breast and belly, and grey on the flanks. The narrow superciliaries, bars under the eyes, and lores black. Wings dull black. Primaries white in their basal half, forming a large mirror; secondaries have only white at the tips; shoulders white. The small upper wing-coverts grey, remainder dull black; lower wing-coverts white.

The outermost rectrices are white, with a narrow black stripe down the basal half of their shafts; the next pair are the same colour, though in some cases with a larger black mark on the basal half on the inner web, or with a narrow black edge on the same web. The remainder are dull black, the 3rd, 4th, and 5th pairs with continually diminishing white tips; the median rectrices without terminal spots.

The female does not differ in plumage from the male.

We obtained eight specimens of this Shrike for our collection—three young, one old male, and four old females.

In the young birds obtained early in June the grey colour on the upper part of the body is thickly covered with a reddish-brown tint. The rose-colour on the abdomen is also mingled with a reddish hue; the breast has barely perceptible wavy brown striations. The blackness of the gape and the cheek is less intense; the superciliaries are not so marked. The quills and upper wing-coverts have narrow brownish margins. The second pair of rectrices are black on the basal half of the inner web; the two median rectrices have small reddish spots on the tips.

This gigantic Shrike, larger than all its congeners, was first met with by us on the 19/31 May, 1880, on the Upper Hoang-ho, south of Gomi. A pair were nesting on the border of the drift-sands, where the willow and an occasional poplar grow. The male bird was an excellent songster.

The same year, as we were skirting the eastern shore of Koko-nor lake, on the 1/13 July, we came upon a brood of three young birds, again in drift-sands among clumps of thick spruce-woods. The old birds were then moulting, and their young had already abandoned the nest. The note of old and young alike was very loud. A short time afterwards we came across a second brood in the mountains bordering the plateau of Koko-nor lake.

In the spring of 1884, on my fourth journey in Central Asia, the first migratory specimens (three in number) were observed on the 14/26 April on the southern slope of the South Koko-nor range. They kept in the underwood, and the males sang splendidly. A few days afterwards we secured a solitary female, and lastly, during the autumnal flight in the same year (1884), a single specimen was observed on the 15/27 August, in thickets of tamarisk in the ravine of the Khatu-gol, on the northern margin of the Burkhan-Buddha range.

Thus *L. giganteus* is in general a rare bird, and up to the present time only found in the basins of the Upper Hoang-ho and Koko-nor lake. Like the Shrikes, its habits are predatory. My companion, M. Roborowsky, once shot a female which had just caught and devoured an *Arvicola*.

6. LEUCOSTICTE ROBOROWSKII, sp. n.

Capite colloque coccineis; gula maculis triangularibus micante-albis, cervice similibus, sed minoribus, ornatis. Toto corpore miniato-roseo; marginibus singularum plumarum colli postici, dorsi, scapularium, tectricumque alarum externarum coccineis. Remigibus et rectricibus brunneis, roseo marginatis.

Dimensions:—

	Length.	Expanse.	Closed wing.	Tail.	(Culmen.)	Tarsus.
♂	168	356	123	90	13·5	21

The 2nd primary is the longest; 1 = 3 a little shorter. The bill is dark horny, the base of both mandibles paler; eyes dark hazel; feet brown.

Male. Upper part of the head carmine, with silvery specks on the nape; sides of head and throat blackish carmine*, with large triangular silvery spots on the throat. The whole body is of a reddish-pink colour, with carmine margins on the back of the neck and back, as well as on the shoulders and upper wing-coverts; the prevailing colour of these latter is light brown. Tail-feathers, upper and lower tail-coverts are pink; thighs white; on the hinder flank-feathers a few long blackish bars are noticeable. The feathers under the shoulders and the lower wing-coverts are white, with pink margins. The primaries are brown, with whitish-red margins, wider on the hinder ones, which have greyish-white tips. This is also nearly the colour of the shading on the inner webs of the primaries (except their points) and partly of the secondaries. The rectrices are the same colour as the primaries, with whitish-red margins on their outer webs, except the outer pair, which have white margins.

We only obtained one specimen of this species—a male in summer plumage, much worn, from which the diagnosis has been made.

This species is named by me in honour of my travelling companion and assistant, Lieut. Roborowsky, whose untiring energy was of such great service to the scientific labours of my third and fourth expeditions in Central Asia.

On all my four journeys in Central Asia, *L. roborowskii* was only once met with, on the 1/13 August, 1884, on the pass leading from the plateau of Tibet across the eastern part of the Burkhan-Buddha range. Two or three pairs of these birds at that time kept together with *Leucosticte hæmatopygia* in the highest zone of the alpine region, at a height of 15,000 to 16,000 feet, descending a little to the alpine meadows; but we only obtained one male bird. We did not hear its note, and in habits and mode of life we found this little bird indistinguishable from *L. hæmatopygia*.

7. PYRGILAUDA BARBATA, sp. n.

Notæo rufescente-fulvo, immaculato. Collo postico lateri-

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* The black colour appears here, owing to the tips of the feathers being so much worn.

> busque ejus rufescentibus. Fronte genisque albis. Macula frontali media, superciliis, loris, mento, gulæque parte superiore nigris. Reliquo gastræo albo, corporis lateribus rufo tinctis.

Dimensions taken from an old male and an old female; the remaining five specimens in our collection are either young birds or of doubtful sex.

	Length.	Expanse.	Closed wing.	Tail.	(Culmen.)	Tarsus.
♂ ..	145–150	275–280	93–100	55–60	10–11	18–20
♀ ..	150	280–290	92–97	56–57	10–11	19–20

The apex of the wing is formed by three primaries, of which 1=3, 2nd is a little longer, but sometimes 1=2. The tail is slightly curved. The bill, which is black, is shorter and much thicker than in *P. ruficollis*; the legs are also black; the eyes light hazel.

The upper part of the body is of a brownish sandy colour, becoming rufous-brown in fresh autumn plumage; this species has none of those dark spots on the back peculiar to others of the genus *Pyrgilauda*. The nape is pale red; sides of neck the same colour, but deeper. Forehead, sides of crown, and cheeks white. The streak from the bill along the centre of the forehead to the crown, the straight superciliaries parallel with it, and the lores are black, as are also the chin and upper part of the throat, forming a kind of bushy beard. The underparts are white, flanks reddish; lower wing-coverts and rump white; median upper tail-coverts the same as the tail-feathers and back, but the lateral tail-feathers are white. The primaries are blackish brown, and from the fourth, sometimes also from the third, have a white speck in the centre, increasing on the posterior quills, thus forming an oblique white stripe, hardly observable, however, on the closed wing; the outer margin of the primaries is white, that of the others (except the inner ones) brownish; the secondaries are tipped with white.

The lesser wing-coverts are brownish grey; the remainder the same colour as the wing, but these, as well as the inner primaries, have a wide edge the same colour as the back. The central rectrices are blackish brown, with a wide reddish border; this, too, is the colour of the specks on the tips of the remaining rectrices. These specks are divided below by a wide band from the basal half of the same rectrices, where the prevailing colour is dark brown or blackish brown mixed with white; the outer web of the first rectrix, and sometimes of the second, is white.

The female is not distinguishable from the male.

This bird, together with *P. ruficollis*, inhabits the meadows in the mountain defiles of Northern Tibet at an elevation of 12,000 to 14,000 feet. There it appears to be local, and is generally a rarer bird than its congener, although common enough. In the steppes of Koko-nor, where *P. ruficollis* is numerous, we only once found a pair of *P. barbata*. In Northern Tibet we only came across it on the north of the Tang-la range, while *P. ruficollis* was frequently met with on the southern slope of these mountains as well. In the winter of 1884–85 *P. barbata* was occasionally met with again, in company with *P. ruficollis*, in that part of Northern Tibet marching with Gass (south of Lob-nor). In character and habits of life both species are identical, though the note differs. They live in the burrows of *Lagomys ladacensis* which cover in countless numbers the meadow-expanses of Koko-nor and Northern Tibet. In these burrows the little bird we are describing passes the night and hides from danger; here, too, it probably forms its nest. Its flight is undulatory, low, and rapid; it is also a swift runner. In the winter of 1880–81 *P. barbata* was occasionally found in Northern Tibet in flocks of twenty to forty; but we neither heard its song nor that of *P. ruficollis*.

8. PYRGILAUDA KANSUENSIS, sp. n.

Minima. Notæo brunnescente-fulvo; capite sordidiore, uropygio pallidiore. Collo postico albescente-fulvo, dorso longitudinaliter brunneo maculato. Gastræo sordide albo, corporis lateribus rufo tinctis. Remigum brunnearum pogoniis externis fulvescente marginatis, speculo alari minimo. Rectricibus brunneis margine fulvescentibus; externarum pogoniis externis albis, reliquum maculis albis variegatis.

Dimensions :—

	Length.	Expanse.	Closed wing.	Tail.	(Culmen.)	Tarsus.
♂	127–130	117–121	77	39	9	17·1
♀	?	?	76	41	9	17·3

Of the primaries the 2nd is the longest; 1 = 3, and sometimes 1 = 2. The outer rectrices (in full plumage) of its delicately striated tail are 3 mm. shorter than the tertiaries. The bill is yellow, tipped with brown at the extremities of both mandibles ; the tarsus brownish, toes darker, nails dark brown. Eyes hazel.

Top of the head uniform brown ; nape and sides of neck yellowish-whitish-brown; back yellowish brown, with blackish long streaks ; tail-coverts and upper tail-coverts reddish brown. Lores and hardly perceptible superciliaries dusky whitish; ear-coverts light brown; cheeks and all the underparts of the body dirty white, with reddish-brownish tinge on cheeks and crop, more reddish on the flanks, which are uniform in colour; feathers on rump rufous white. In full plumage the upper part of the throat shows a blackish colour through the white points of the feathers, where these are not abraded. The wings are blackish brown, with brownish-yellowish margins, both on the quills and upper coverts ; the margin of the outer web of the first rectrix is white. In the centre of the inner web of the flight-feathers, beginning at the fourth, there are white specks forming a mirror, hardly noticeable when the wing is closed ; the lining of the wings is white. The tail is dark brown, with brownish-yellowish margins to the rectrices ; the outermost pair is white, sometimes with dark-brown spots on the inner webs ; the remaining rectrices, with the exception of two or four medians, which are of one colour, are white on the centre of the inner, and sometimes of the outer web.

The female is not distinguishable from the male. In all my four journeys into Central Asia the species described was met with only once, on the 7/19 August, 1880, in the province of Kan-suh, in the steppe and partly in the hilly belt north of the Chagrin-gol. In the beginning of February 1884, on my second visit to the Chagrin steppe, we did not come across any of these little birds, although we searched diligently for them during three days.

In habits and manner of life *P. kansuensis* is not distinguishable from other *Pyrgilaudæ*. It also frequents burrows; but these, instead of belonging to the *Lagomys*, of which there are none here, are the dwellings of a species of *Spermophilus*. Its flight is low, undulatory, and generally to no great distance.

9. OTOCORYS TELESCHOWI, sp. n.

Magnitudine *O. penicillatæ*. Fronte, pileo, loris genisque nigris; his â macula pectorali nigra fasciis albis separatis.

Dimensions:—

	Length.	Expanse.	Closed wing.	Tail.	Bill (culmen).	Tarsus.
♂ ..	188–190	330–348	109–114	80–85	12 13·5	24–24·5
♀ ..	184–196	318–344	103–104	77–78	11–13	22·5–23

The three outer primaries are the longest, the second of these being longer than the others $=3>1$; sometimes $2>1=3$, or $2>1=3$, lastly, $1=2=3$. Eyes are dark hazel; upper mandible black, lower bluish horn-coloured, tipped with black; legs dark brown.

Male. Forehead, crown, lores, cheeks and sides of the throat, and breast-band deep black; the latter divided from that on the neck by a wide white band uniting the white throat with the white sides of the neck; the stripes at the back of the eyes towards the back of the head and wing-coverts are also white, the latter not uncommonly with a brownish or rufous tinge. The breast, belly, and rump are white, with a brownish or reddish tint; flanks, and sometimes thigh-feathers, pale reddish. Back of the head and nape of neck brownish pale wine-colour, extending to the lesser and median of the upper wing-coverts. Back and shoulders brownish sandy, with narrow blackish stripes on the shafts, sometimes barely noticeable. Tail-feathers and upper tail-coverts reddish sandy colour.

The two central rectrices are the same colour as the back, *i. e.* brownish or yellowish sandy, with shaded blackish stripes lengthwise; the other rectrices are black. The outer web of the outermost pair about halfway up has a white margin, but in its upper part the whole web is white; the next rectrices have only a white margin on the upper part of the outer web. The quills are dark brown, with yellowish-white margins on the outer webs and tips, similarly tipped on the secondaries; the outer web of the primaries is altogether white; the tertiary quills, as well as the upper wing-coverts, have a wide border the same colour as the back. The lining of the wings and feathers under the shoulders are white.

The female, like others of the genus *Otocorys*, has a narrower black belt on the breast; the sides of the throat and head are blackish brown (they are black in the male), becoming sandy yellowish on the crown, assimilating to the upper part of the body.

This species—named by me after my travelling companion, P. P. Teleschow, senior subaltern of the Trans-Baikalian Cossacks, who prepared the skins of all specimens obtained on my fourth journey, and actively cooperated in the general work of the expedition—frequents the mountainous border of Northern Tibet, in the region between the gorges of the Cherchen and Khoten, *i. e.*, the newly discovered Russian range and that of Keria. Besides this, *O. teleschowi* was first met with by us in the Chamen-tagh range, on the Tibetan plateau, to the west of Gass. It is, however, more common in the Russian range, where it haunts springs and rivulets at the entrances of defiles along the northern foot of the mountains. Its note, flight, and habits are not distinguishable from those of *O. albigula*, which it replaces in the above-mentioned ranges.

XLI.—*Description of a rare Species of Plover from the Cameroons Coast.* By Captain G. E. Shelley, F.Z.S.

Mr. H. H. Johnston has recently sent home a small collection of West African birds, procured by him in the swampy marshes of the Rio del Rey, near the Cameroons. This collection contained two specimens of a Plover entirely unknown to me, so I consulted Mr. Seebohm, who is preparing a volume on the geographical distribution of this order of birds, and who finds that this Cameroons species is very distinct from anything that he has hitherto seen. He is, however, of opinion that it would be unwise to describe it as a new species, since it will most likely prove to be the adult of *Lobivanellus superciliosus* of Dr. Reichenow, which was described in the 'Journal für Ornithologie,' 1886, p. 119, and figured on plate iii. fig. 2. That description was taken from a "young, apparently not completely coloured individual," obtained by Dr. Böhm and Mr. Paul Reichard at Marungu, on the south-west shores of Lake Tanganyika, in Central Africa.

As the adult plumage of this species is undescribed, I append the following description.

SARCIOPHORUS SUPERCILIOSUS (Reichenow).

♂, Rio del Rey. A broad, sandy or very pale rufous forehead; crown and nape black, a well-developed pendent yellow wattle in front of the eye, remainder of the head and neck uniform ashy grey. Back, scapulars, lesser, median, and the basal portion of the greater wing-coverts uniform pale olive-brown with a greenish gloss. Upper tail-coverts and tail white; the latter with the end half of the centre tail-feather black, this black band rapidly narrowing and becoming subterminal towards the outer feathers, and almost obliterated on the outer webs of the tail, where it is only indicated by a dusky shade. Primaries jet-black, with narrow white bases which do not show beyond the under wing-coverts. Greater wing-coverts broadly tipped with white; secondaries white, with black ends to all but the innermost ones, the black ends increasing in breadth towards the outermost feathers. Crop chocolate-colour, with a vinous shade; remainder of the underparts of the body, axillaries, and under wing-coverts white. Colour of the bill uncertain, but probably deep red, with a pale end. Legs reddish black. Total length 10·5 inches, culmen 0·8, wing 7·6, tail 3·2, tarsus 2·1.

The second specimen is similar to the one described.

The young bird described by Reichenow agrees very closely with the adult example from West Africa in its dimensions, but differs from it in having the crop rusty brown (instead of vinous chocolate), and in having the crown dark brown (instead of black), with the rusty brown of the forehead prolonged into a stripe over each eye.

The genus *Sarciophorus*, like *Lobivanellus*, has wattles in front of the eye, but has been separated on account of its members having only three toes; the hallux, or hind toe, being entirely absent. The type, *S. tectus*, like the present species, has no spur on the wing.

The genus *Sarciophorus* comprises four species:—

1. *S. tectus*, from N.E. Africa and Senegambia.
2. *S. superciliosus*, Cameroons and Lake Tanganyika.
3. *S. malabarica*, India.
4. *S. pectoralis*, Australia.

S. superciliosus, when adult, may be readily distinguished from all other Plovers by its pale, rufous-shaded forehead, its black crown, and chocolate-coloured crop.

At all ages it may be diagnosed from every other species of the group by its combination of four characters—small wattle, red legs, no hind toe, and white outer tail-feathers.

XLII.—*Note on* Baza ceylonensis. By Samuel Bligh, of Catton, Coslanda, Ceylon. (Communicated by J. H. Gurney.)

Towards the end of April I was delighted to find that a pair of *Baza ceylonensis* had taken up their quarters in a piece of old forest of about five or six acres left on this estate, near my bungalow, where the old trees have been thinned out, but a few giants are left, and these they particularly haunted. I would not molest the birds, in the hope they might nest, but they only stayed two or three weeks. Their sailing high in the air over the trees and playing in the air was a treat to see; and their peculiar tumbling, like that of a Tumbler Pigeon, was especially pretty, though the male only seemed to do this. He would first rise, with a few laboured flaps of the wings, almost perpendicularly, perhaps at an angle of 70°

or thereabouts; but at whatever angle the bird rose, by a few flaps it attained a perfectly perpendicular position, as if suspended by its bill from the zenith, with its wings quite closed for a perceptible time; it then descended rapidly fifteen or twenty feet in a half-falling half-diving sort of way, but without turning a somersault, though the bird changed its position from head upwards to the reverse so suddenly as to cause it to appear to turn over. This play it would repeat three or four times in one place, and again further onwards; its mate was generally within fifty or a hundred yards, but sometimes much nearer.

I particularly noticed the call-notes; these were like *kè-wēē-kè-streer*, often repeated when the bird was playing; at other times quite a different call, like *itta-jee-ow*, repeated at short intervals.

I noticed that these birds now and again dashed off from their perches into the foliage of the tops of the trees, and secured some prey which they carried in their claws to a perch to eat.

XLIII.—*On the Structure of the Barbs, Barbules, and Barbicels of a Typical Pennaceous Feather.* By Richard S. Wray, B.Sc. (London).

(Plate XII.)

Having occasion to illustrate the above structure in the Index Museum of the British Museum (Natural History), Professor Flower and myself came to the conclusion that the best way to do so would be by the preparation of a model, the making of which I undertook, and consequently I had to go thoroughly into the appearances presented by the parts specified. I find that although my observations correspond in all main particulars with what is already known, there are some points, especially in the relations of the proximal barbules to each other, which have not previously been fully appreciated. These points, and the fact that no good figure appears to exist giving at all a full idea of the completeness and adaptive organization of these parts, have made me think that it might be worth while to publish the results of my work, founding my remarks upon the embodiment of it in the model which is in the Natural History Museum.

Figure 1 represents the main part of the model, and shows the inter-relation of the different parts.

Figures 2 and 4 represent part, modelled separately, showing the different details.

Figure 3 shows appearances which are indicated on the model (fig. 1), but cannot be shown in the drawing.

The model was made in gutta-percha, and modelled from nature, the feather selected being a greater wing-covert of a Goose.

Taking the parts in order, the stem of the feather gives off on either side the barbs, and they in turn the barbules, which are termed distal and proximal according as they originate from the side of the barb nearest the tip or the base of the feather. The barbules cross one another at an angle, and are especially modified to give consistency to the vanes. It is this adaptation the model was designed to show.

The proximal and distal barbules differ totally in form. The proximal barbules are (as shown in fig. 2) thin laminæ with a thickened upper edge forming a small ledge or kind of flange (fig. 2, 1); the broad end is the one attached to the barb; the free half of the barbule is much narrower, and fines away to a mere filament. Where this thinning commences it is seen that the flange presents a broken appearance, there being three indentations giving a short "dog-tooth" edge (fig. 2, 2); beyond that the flange fines away. If a single barb be examined, the proximal barbules appear coming off at regular intervals, and at their proximal end appear to join on to an edge-piece running parallel to the barb. If now they are torn asunder with needles, this edge is seen to be formed by the attenuated halves of these barbules overlapping one another and being turned at a considerable angle upon the other half. The "dog-tooth" portion allows of this folding in the flange without any crumpling (fig. 3, α and β). This arrangement gives strength and elasticity to the proximal half of every barb, since no one barbule bears at any time the whole of any strain placed directly upon it, but the strain is of necessity distributed.

The distal barbules present a totally different modification (fig. 4). Each one is a thin lamina bearing on its distal two-thirds barbicels, hooked in the centre of the barbule, but not at the end. The proximal third is a flat lamina about as broad as the proximal barbules, then it presents two or three tooth-like processes (fig. 4, 1) and becomes quite narrow, bearing five hooked barbicels, and then four or five unhooked ones, the end of the lamina being continued as a barbicel-like process. These all occur on its lower edge. On its upper edge there occur as many small tooth-like processes (fig. 4, 4) as there are unhooked barbicels, the two forming four or five pairs of processes.

If a section of a barb be examined showing the attachment of the barbules, the proximal barbules are seen to be attached somewhat lower down than the distal; and the proximal barbules slope gently downwards from their attachment, while the distal slope gently upward (*cf.* fig. 1). The distal barbules overlap the proximal, the overlapping being confined to the part beyond the teeth (1. fig. 4), the ends of the unhooked barbicels lying over the upper edge of the barb often. The hooklets (hamuli) catch the flange of the proximal barbules, and, being regularly arranged, each hooklet has a grip on a separate barbule; each distal barbule, therefore, is connected with five proximal ones, and as each of these is intimately connected with its fellows by the overlapping previously described, the whole forms a most complete adaptation of structure to function (*cf.* figs. 1 and 4).

The methods adopted in procuring data for the making of the model were as follows:—

(1) A feather was soaked in turpentine, and bits of the vane were cut out and mounted in Canada balsam, showing the upper and lower surfaces.

(2) Separate barbs were taken and mounted, the barbules on some being teased out with needles, on others the

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Fig. 2

Fig 1a.

Fig. 3.

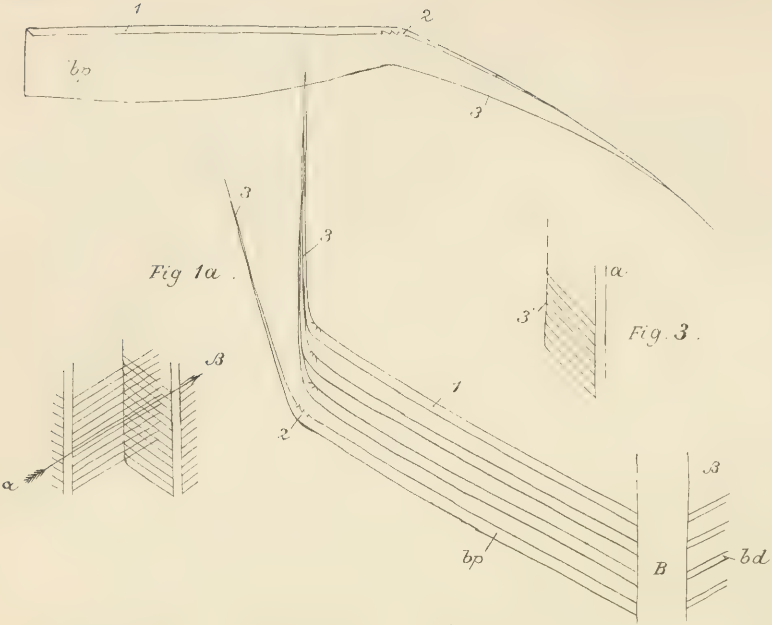

1
2
bp
3
3
3
1
2
bp
α
β
α
3
B
β
bd

Fig. 4.

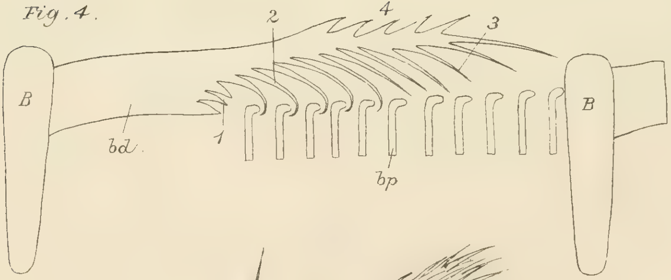
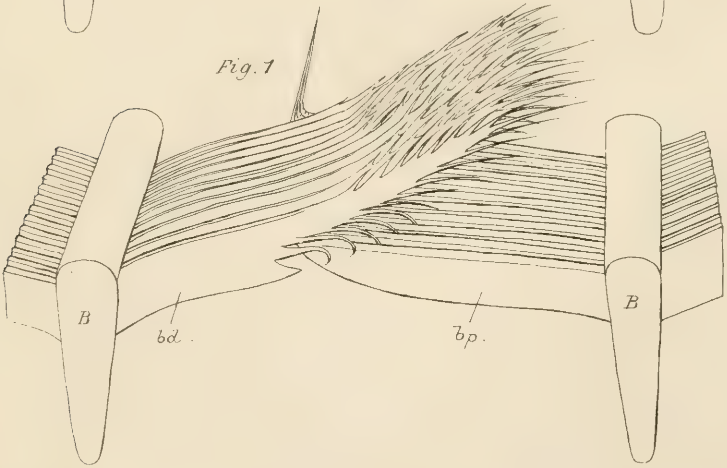

2
4
3
B
B
bd.
1
bp

Fig. 1



P. Smit lith.

Hanhart imp.

STRUCTURE OF FEATHER.

barbules were cut off by placing a sharp razor on the sides of the barb and pressing gently on the slide, when sufficient perfect barbules of each kind were obtained for examination.

(3) Portions of the vane were carefully embedded in paraffin, and sections cut and mounted by the kreosote-shellac method, so that the parts were obtained in their relative, natural and undisturbed positions.

(*a*). Transversely : *i. e.*, at right angles to the long axis of the barb).

(*b*) Horizontally : *i. e.*, parallel to the surface of the vane.

(*c*) Oblique sections in directions parallel to the distal barbules (*cf.* fig. 1*a*, *a* to *β*). Some of these showed the barbs in oblique section, a distal barbule quite perfect, and sections of the proximal barbules. In these could be seen exactly how the hooklets cling to the flange (*cf.* fig. 4).

Drawings were then made of all the parts in every position from these working-drawings, and the model produced in gutta-percha.

EXPLANATION OF PLATE XII.

B, barb ; *bd*, distal barbule ; and *bp*, proximal barbule in all figures.

Fig. 1. Perspective view of portions of two adjacent barbs looking from the main stem towards the edge of the feather.

Fig. 1*a*. Diagram of surface view, *a* to *β* direction of oblique sections described in text.

Fig. 2. A proximal barbule. 1, flange; 2, "dog-tooth" part of flange; 3, overlapping portion.

Fig. 3. Diagrammatic view of a barb from above. *a*, slightly magnified ; *β*, more highly magnified ; 3′, the apparent firm edge parallel to barb. B shows its composition, 1, 2, 3 as in fig. 2.

Fig. 4. Oblique section in direction *a* to *β* (fig. 1*a*), showing the exact manner of the interlocking of the barbules. 1, tooth-like processes ; 2, hooked barbicels ; 3, unhooked barbicels ; 4, processes serial with 3. The proximal barbules, *bp*, are seen in oblique section.

XLIV.—*Notes on the Birds of Teneriffe.*

By Capt. Savile G. Reid, R.E.

At the end of January of the present year (1887) I fled in despair from the prolonged horrors of our English winter to the genial climate of the Canary Islands, and during a pleasant sojourn at Orotava, Teneriffe, until the middle of the following April, I made a few notes on the ornithology of that island, which may be of interest to the readers of 'The Ibis.'

I was aware that, owing to the excellent work done in previous years in that island by Messrs. Webb and Berthelot, Dr. Bolle, and Mr. F. D. Godman, there was not much prospect of anything new; but I found many interesting species and enjoyed my ornithological excursions immensely, in spite of the bad roads (always excepting the excellent "carretera," or main road) and the indifferent means of locomotion.

Through the kind intervention of Mr. Peter S. Reid, our British Vice-Consul at Orotava, well known to the native and foreign population there as "Don Pedro," I was introduced soon after my arrival to the captain of the militia, Don Benjamin Baeza, the same who in 1871 had accompanied Mr. Godman in his rambles about the island. With him I got on famously, and we were doing great things, when, alas! he suddenly sickened and died; his death putting an end to the success and pleasure of my work in a manner that I cannot attempt to describe. He was a really good fellow, who knew everybody and everything in the island, besides being a fairly good ornithologist and taxidermist and a tolerable shot. I followed the poor man to his grave a few days before we were to have gone on an expedition to the island of Fuerteventura, where we had hoped to reap a rich harvest, our preparations having been most carefully made, and everything arranged even to the hour of sailing of the schooner; which is saying a good deal in a Spanish island like Teneriffe.

The unfortunate loss of my friend and guide quite upset my plans, and I remained at Orotava the whole of the two months of my visit; consequently my notes are confined to observations made in Teneriffe itself, and principally on the north and north-west portions of the island. It is therefore hardly desirable to tabulate the notes in any formal manner, and I think the following brief account of the general results of my work will be much more interesting.

On arriving in Teneriffe I had one or two fixed ideas in my head, thanks in a great measure to the advice of ornithological friends. These were, in the first place, to endeavour to clear up the mystery surrounding the identification of the one or more species of "Trocaz" Pigeons occurring in the Canary Islands—the *Columba laurivora* of Webb and Berthelot, the *C. bollii* of Godman, and perhaps the *C. trocaz* of Madeira and the Azores; secondly, to determine, if possible, the actual species of Buzzard, Shrike, Raven, Turtle Dove, Bustard, &c. occurring within the Canarian archipelago. I was unable to effect the satisfactory settlement of all these questions, but I trust that the information I acquired may clear up many doubtful points.

To begin with the Pigeons: an interesting subject certainly, but one requiring a visit to the other western islands of the group, notably Gomera, for a proper determination of their distribution. It was some time before I even saw a Pigeon, the shady laurel and heath forests frequented by them being high up on the mountain-side and a long ride from Orotava. I was at last rewarded, however, by obtaining a pair of birds, with nest and egg, of what is undoubtedly *C. bollii* of Godman. Three nests were found, but only one was occupied at the time. I received a second egg from another of these nests shortly afterwards. As the nest and egg of this Pigeon are perhaps almost unknown at the present time, I venture to give a few particulars.

In company with my friend Major Loyd, late 21st Hussars, I rode over a villainous path from Orotava to the mountains on the 9th March, and securing the services of an intelligent native as guide, proceeded to the laurel forest in search of the "Paloma turquesa," as they call it locally. Our guide

José told us there were only two pairs in this small patch of forest; and his statement was apparently soon verified by the discovery of two nests, both in "breso," or tree-heath (*Erica arborea*), but both empty. We saw our first Pigeon, however, and were contented. On the 16th we again rode out to the place, and were lucky enough to see a Pigeon fly off a third nest in a "haya" tree, a little lower down the hill, but close to the other two. This contained a single much-incubated egg, and is now, with the egg, in my collection. We lay in wait under shelter of neighbouring trees and obtained both birds. There is no doubt as to the species —they are *C. bollii* of Godman, with no white at the tip of the tail. All inquiries from José, as well as from intelligent natives of other parts of Teneriffe, to say nothing of the valuable testimony of Baeza himself, prove that this is *the* Pigeon of the island, and I think it doubtful if the white-tailed species, *C. laurivora*, occurs there at all.

The nests were similar to those of our familiar *C. palumbus*, slight, but tolerably compact structures of small twigs, about 10 feet from the ground. It is somewhat remarkable that only one egg is laid. My egg, above mentioned, was considerably incubated, and José, who obtained another single egg for me about a fortnight later, declared that no more were ever deposited. The eggs measure, on the average, 1·72 by 1·16 inch, and are, of course, of the ordinary Pigeon type. It is perhaps worth mentioning that the male bird returned first to the nest and was shot about half an hour after our discovery; his crop was full of the leaves of some shrub. The female did not present herself for nearly three hours, her crop being crammed with laurel-berries. They are undoubtedly very shy birds, even in the nesting-season. José assured us that they breed at intervals all the year round, which, in a climate like that of Teneriffe, is, I think, quite possible.

I regret that this is all the direct evidence I can furnish as to the distribution of the Pigeons of the Canaries. The only other skin in my collection, obtained for me subsequently by my friend Don Fernando del Hoyo, a zealous naturalist of Orotava, is also *C. bollii*; and my theory is that *C. laurivora* (W. & B.) is not to be found in Teneriffe, though apparently numerous in the neighbouring island of Gomera. Poor Baeza, who was nine months in the latter island and killed many Pigeons there, probably over a hundred, told me they were all *C. laurivora*. This segregation of species differing so little as these two is only what might be expected in an archipelago of large islands like the Canaries, where the intervals between the islands are so wide. I was greatly disappointed at not being able to visit Gomera, but the difficulties of communication were insurmountable. The chance of three days in a wretched schooner (as experienced on one occasion by Dr. Crotch), short of provisions and water, on a voyage of some forty or fifty miles, was sufficient to damp my ardour, to say nothing of the fact that there are no roads and no hotels in Gomera, and that the people there are accounted a most uncouth and inhospitable lot by the Teneriffians—a "muy mala gente," as they term them. When the long-promised steamer runs between the various islands, it will be a comparatively easy matter to settle the Pigeon question; and I confidently look forward to its solution within the next two or three years, for I am given to understand that the Spanish Government have at last consented to subsidize steamers carrying the local mails at regular and constant intervals.

I had very little opportunity of studying the habits of *C. bollii*, but it appears to be an uncommonly shy and wary bird, and comparatively few are obtained by the local sportsmen or "cazadores." It must be tolerably numerous in the belt of forest between Agua mansa (the ravine where I obtained my nest, above the eastern end of the so-called valley of Orotava) and Tacoronte, for I frequently heard accounts of numbers seen in the cultivated ground below the woods, and I also noticed feathers belonging to them at the drinking-places in the woods of La Mina, above Mercedes, near the city of Laguna. But a visitor might spend months in the island before becoming aware of their existence, nearly all those that are shot being obtained by lying in wait for them at the water.

From Baeza's account, *C. laurivora* is far more plentiful, relatively speaking, in Gomera, but there the woods are much more extensive and suited to their habits. I do not think it likely that the Madeiran form, *C. trocaz,* is ever found in the Canaries; certainly not in the western islands, Teneriffe, Gomera, Palma, and Hierro.

Before leaving the Columbidæ, I may mention that the Rock Dove, *C. livia,* is very common in Teneriffe, frequenting the inland precipices as well as the rocks of the coast. Of the species of Turtle Dove visiting the island, I hope to have more to say later on.

To pass to a very different family, the Falconidæ, I was at once struck, on my arrival, as every naturalist must inevitably be, by the numbers of raptorial birds constantly in sight in Teneriffe. These, on examination, resolved themselves into five species, viz.:—*Neophron percnopterus, Milvus ictinus, Buteo vulgaris, Accipiter nisus,* and *Falco tinnunculus.* I have little to add to Mr. Godman's excellent account of these birds (Ibis, 1872, pp. 164–167), except in the case of the Buzzard, which is somewhat unaccountably *B. vulgaris,* and not *B. desertorum* as it ought to be with due respect to geographical position. This species, the "Aguililla" of the islanders, is very common and breeds in the cliffs which form the abrupt termination of the lava-slopes immediately above the coast-line, as well as in the precipices of the crater-walls more inland. The only note I made worthy of record concerning it is that I witnessed the union of a pair near Agua mansa, the male circling round and suddenly descending upon the female, which was perched on the summit of a high isolated stack of rock in apparent ignorance of his presence, and within 200 yards of our party.

The Kestrel positively swarms, and must have a hard struggle for life, for I do not think there are any rats or mice outside the towns, and the lizards are remarkably wary. It is said to prey much on small birds; but I think the Sparrow-hawk, which is not uncommon, is the culprit in most of the cases described by my informants. Kestrels are constantly to be seen among the houses and gardens in the middle of the towns, so they may occasionally contrive to snap up a well-fed town rat or mouse.

So far as the other members of the Falconidæ occurring in the island are concerned, I have but few remarks to make about the Sparrow-hawk, which is not uncommon near Orotava and along the coast. A recently killed male specimen was brought to me at Buena Vista on the 26th February. I saw several at various times on the wing, and on one occasion, near Orotava, one of these Hawks made a very bold though unsuccessful dash at a small bird within a few yards of a large party of us. Where and when it breeds I am unable to say.

That the Hobby (*Falco subbuteo*) is occasionally found in Teneriffe I am tolerably certain. I saw a small Falcon, which I recorded at the time as of this species, on the edge of the pine-woods above La Guancha; and Baeza informed me that he had shot two during his lifetime, one near the coast below Realejo, and the other near Tacoronte. He described the bird accurately, and from his knowledge of the subject I conclude there is no doubt as to these two cases. Webb and Berthelot include the Hobby in their list, but Bolle seems doubtful about it (*vide* Godman, Ibis, 1872, p. 165).

I regret that I have no information about the Peregrine. I fully expected to meet with it in the upper regions of the island, but I never saw or heard of one. Its absence, real or apparent, is the more remarkable when one considers the reliable evidence of its former occurrence, or, it may be said, abundance, given in Don José Viera's 'Diccionario de Historia Natural de las Islas Canarias,' written in 1799, a copy of which I was lucky enough to obtain. I venture to give a translation from this work :—

"The species of this noble raptorial bird found in our island has acquired considerable reputation. Edmund Scory, in his observations on Teneriffe, published by Purchas (vol. v. chap. 12), affirms that the Falcons of this island were the best and strongest that could be found in the world for seizing and taking their prey, owing to their being of a more robust type than those of Barbary; and he relates that the Captain-General of the Canaries, amusing himself one evening in the citadel of Laguna by watching several Falcons which, with splendid impetus and skill, were dashing down upon the various water-fowl forced by the peasants with their slings to rise from the surface of the lake, counted them; also that a certain Falcon of Teneriffe, which the same Captain-General had presented to the Duke of Lerma, minister to Philip III., escaped and returned from Andalucia to its own country, performing the journey of 250 leagues in sixteen hours, and bringing with it its collar with the coat-of-arms of the Duke. Count Buffon, in his 'Natural History,' mentions this occurrence (vol. i. Birds, p. 33)."

What has become of this famous breed of Peregrines in Teneriffe? It has been exterminated, apparently. We in England know how tenaciously the much-persecuted Peregrines of our southern coasts hold their own, and it is difficult to realize the change brought about in a wild spot like Teneriffe in something less than a century, for Viera speaks of it as common in 1799.

It is somewhat strange that the Osprey (*Pandion haliaëtus*) has been so little observed in Teneriffe, where it undoubtedly occurs, for my friend, Don Ramon Gomez, has two examples in his collection, obtained by himself on the shore; and it breeds in the island of Gomera, for Dr. Crotch told me he had eggs in his possession taken there. I fancied I saw one near Orotava on one occasion, but could not identify it satisfactorily. Baeza and others assured me that it also breeds in Teneriffe, and I see no reason to doubt it, for the coast abounds in suitable nesting-sites.

Passing to the Owls, I found the Long-eared Owl (*Asio otus*) a common species near Orotava; an evening seldom passed without one or more being seen, and they undoubtedly breed in some thick palm trees in a villa garden just above the Grand Hotel, belonging to an English lady, Mrs. Smith, whence they were on one occasion dislodged for my inspection. I obtained several specimens near Orotava, and saw others along the north-west coast near Garachico and Buena Vista.

The Barn Owl (*Strix flammea*) is apparently rare. My friend Gomez, the principal chemist of Orotava (who has a most creditable museum of natural history and archæological remains), possesses a specimen; but I did not meet with one myself.

The Curator of the Botanical Gardens at Orotava, Herr Vilprecht, an intelligent observer, assured me he had seen an example of the Little Owl in the Gardens. This is not at all improbable, and I was much astonished at not meeting with some species of *Athene* in such a suitable place as Teneriffe. The absence of the Eagle Owl is remarkable in a rocky mountainous island where rabbits are fairly numerous; but I failed to hear of it, though I was continually making inquiries.

The Blackbird (*Turdus merula*) has been restricted by former writers to the upper wooded districts; but this is unquestionably an error, for it is numerous in the gardens of Orotava, and delighted us at the hotel by its song in the early spring. I have seen three or four at a time there, and a brood was hatched out during my stay. I also noticed it frequently along the sea-coast, on the north-west shore, in suitable places. It is certainly more numerous in the forest-belt, to which two other familiar species, the Robin and the Goldcrest, are confined; but, whether of late years or not, it has now obtained a permanent footing in the cultivated grounds below.

Another bird that has now become quite as common in the lower as in the forest region is the Chiffchaff (*Phylloscopus rufus*), which is extremely abundant and lively in all the gardens and orchards of Orotava and elsewhere along the coast. I was sorely puzzled by the notes of this bird, which differ considerably from the well-known "chip-chop" so welcome to our ears in early spring in our English woods. The Canarian bird expresses its song at greater length in a desultory manner, though also in monosyllables resembling the sounds "chip-cheep-cheep-chip-cheep," &c.; and when the breeding-season arrived, and I was enabled to examine the nest and eggs, I was still more at fault, for the nests were generally four or five feet from the ground, the entrance-hole being large and near the top, the eggs being spotted with *pale* red, like those of *P. trochilus.* My specimens, however, have been submitted to several of the highest English authorities, and there is no doubt that the bird is true *P. rufus,* its notes and nesting-habits perhaps modified by its remote insular position.

I observed the Sardinian Warbler (*Sylvia melanocephala*) in the hotel garden at Orotava, and found the Spectacled Warbler (*S. conspicillata*) extremely common in the coast-region, though absent above in the forest. My friend Major Loyd and I discovered many nests of the latter in the shallow scrub-covered ravines winding about among the cultivated fields to the eastward of Orotava. Five eggs were the usual complement, the bird sitting very close, even before incubation had commenced.

The Blackcap (*S. atricapilla*) is common in the cultivated land, and was a great feature in the hotel garden at Orotava. Its delightful song was constantly heard from the shady recesses of the thickest trees, and it was a general favourite. I never heard of the peculiar variety with the black neck and shoulders found in Madeira, nor do I believe it occurs in the Canaries. The "Capirote," as it is called, is apparently a late breeder, for I did not come across a nest up to the time of my departure; but Don F. del Hoyo has since sent me specimens of the eggs, which are exactly like those found in England. At Mercedes, near Laguna, we noticed oranges on the trees, the inside of which had been completely and neatly removed through a large hole at the top. This, we were assured by our "arrieros," was the work of the "Capirote," and we afterwards saw, in Laguna, a ripe orange fastened to the bars of a cage containing one of these birds.

I failed to meet with the Whitethroat and the Subalpine Warbler in any of my rambles, although, according to Berthelot and others, they occur in Teneriffe. I was equally unfortunate with the Redstart and the Stonechat, though I paid a special visit to Mercedes in search of the latter.

Of the Canarian Pipit (*Anthus bertheloti*) I saw a great deal. They are very early breeders, and the first nest, found by Major Loyd near the hotel, contained three newly hatched young on the 2nd March; while in another I found three incubated eggs on the 4th of the same month. After this we examined several other nests at intervals, up to the date of our departure early in April. The nest is by no means easy to find, being artfully concealed under a tuft of weeds in broken ground. In all cases where we removed the nest we came to the conclusion that the hollow or depression in which it was placed had been scratched out and deepened by the birds, which seems to me a curious fact. The nests resemble those of our familiar Meadow Pipit, being composed of dry weed-stalks and coarse grasses, lined with finer grasses and horse-hair. The eggs, which average three in number (more are said to be laid in a second nest later on), are also very similar: greenish grey, with dark freckles all over, averaging ·77 by ·58 inch. This is certainly the commonest of Teneriffian birds, and is to be found breeding as high as the Cañadas, at an elevation of some 7000 feet, as well as a few feet only above the sea-level. It is a lively little bird, but not, to my mind, so objectionably squeaky and irritating as our Meadow Pipit. Like the latter, it has a feeble song, and may be seen singing on the wing. On approaching the site of a nest the old birds sneak quietly off, threading their way among the weeds like mice, and it was seldom that we could discover the nest until we had paid repeated visits to the spot.

The Ultramarine Tit (*Parus teneriffæ*) is exceeding common from the sea to the upper limit of the forest; but I failed to meet with the Great Tit in the pine trees, where it is said to occur.

Swallows (*Hirundo rustica*) first appeared on the 26th February at Buena Vista. I saw quite a number of Martins (*Chelidon urbica*) flying over the houses at Orotava on the 29th March, but did not meet with the species again (*cf.* Godman, Ibis, 1872, p. 171).

With regard to the two Swifts found in Teneriffe, I think I may safely assert that *Cypselus pallidus* is stationary all the year round. I observed several the day I landed, 4th February, and was told by all my ornithological friends in the island that they were to be seen throughout the winter. Up to the 5th April no example of the other species (*C. unicolor*) was met with, but on that day young Baeza shot one and brought it to me. That both breed in Teneriffe is, I think, certain.

The *Fringillidæ* are numerous in the island, though the actual number of species is comparatively small. Foremost among these is, of course, the Canary (*Serinus canarius*), which, with the exception of *Anthus bertheloti*, is the commonest bird of all. It is truly a sweet songster, fully deserving its reputation; and to lie awake in the early hours of a March morning, with one's window open (think of that, ye shivering Britons!), listening to the "real wild" Canaries singing in the garden close by, is alone worth a journey to these "Fortunate" islands.

Goldfinches and Linnets are numerous, and the Common Bunting is a perfect nuisance there, as in many other places, with its harsh spluttering attempt at song. The Azorean Chaffinch (*Fringilla tintillon*) is common at a slight elevation, but does not descend to the coast-line; the male in breeding-plumage is a very handsome bird.

I was very sorry not to meet with the Teydean Chaffinch (*F. teydea*), the most interesting bird in Teneriffe, though I went to several likely places in search of it. The natives could not tell me where these birds go to during the winter, and it seems quite a mystery. Later on they appear in certain places, and are comparatively easy to obtain. Baeza and I carefully searched the pine-woods above La Guancha, where Mr. Godman obtained his specimens in 1871; but we never even heard the note of the "Pájaro azul," or "blue-bird," as they call it.

The Sparrow of Teneriffe is *Petronia stulta*, the Rock Sparrow, which is to be seen about the towns and hamlets and breeds in holes in the walls. *Passer hispaniolensis* has been introduced some years ago, I was told, from the eastern islands, and is now asserting itself, at any rate, in Orotava, where it breeds in trees in the plaza and is not uncommon.

One of the principal objects of my visit to Fuerteventura was to observe the Trumpeter Bullfinch (*Pyrrhula githaginea*) in its wild state; but the death of poor Baeza put a stop to this. I was shown one, in a cage with a yellow Canary from Europe, which the proprietor had recently obtained from the eastern island, and which he hoped would cross with the Canary.

The Starling (*Sturnus vulgaris*) is only an occasional winter visitor to Teneriffe: I did not meet with it alive, but Don Ramon Gomez has a stuffed specimen in his collection. Viera, in his Dictionary, says the Chough (*Pyrrochorax graculus*) has been obtained a few times in Teneriffe; but it is strange that it should be practically confined to the island of Palma, where it breeds in considerable numbers in the walls of the old crater, or "caldera." My friend Don F. del Hoyo sent me a good pair from that place. There are plenty of suitable spots for it in Teneriffe, but it has never migrated from its original home to take possession of them.

[To be continued.]

XLV.—*Notes on a Collection of Birds made by Mr. John Whitehead on the Mountain of Kina Balu, in Northern Borneo, with Descriptions of new Species.* By R. Bowdler Sharpe, F.L.S. &c.

(Plates XIII. & XIV.)

Beyond the few species described by me in the 'Proceedings' of the Zoological Society for 1879 (p. 245), nothing has been ascertained of the ornithology of the remarkable mountain of Kina Balu. In the present paper I give some descriptions of new species of the greatest interest to science, and it is remarkable to find that some of the genera hitherto believed to belong to the Himalayan subregions have received a startling accession of range. Certainly the discoveries by Dr. Beccari of such Himalayan genera as *Psarisomus, Pericrocotus, Stachyris, Turdinus, Rimator, Pnoepyga, Buchanga,* and *Cochoa* in the higher regions of Sumatra might have prepared ornithologists for the occurrence of some of these genera in the high ranges of Borneo, which, however, had hitherto been considered very Malayan in its avifauna, the only real Himalayan element having been shown, quite within recent years, by the discovery of *Dendrocitta* on the Lawas River, *Rubigula* on Kina Balu, and more lately by that of a *Parus* and *Myiophoneus* in the higher districts of Sarawak (*cf.* H. H. Slater, Ibis, 1885, p. 121).

Mr. Whitehead's first expedition has resulted in the enlargement of our knowledge of this strictly Himalayan element, and although he has not yet met with *Pnoepyga, Cochoa,* or *Rimator,* it is quite possible that they will all be found, along with such forms as *Tarsiger hodgsoni, Hemichelidon cinereiceps, Pterythius æralatus, Oriolus vulneratus, Staphidia,* &c. Apart from these evidences of connection with the Himalayan system of Tenasserim, the Malayan peninsula, and Sumatra, the new forms discovered by Mr. Whitehead are striking enough, viz.: a marvellous new *Calyptomena,* a new genus of Campophagidæ, and a striking new *Arachnothera.*

The connection with the mountains of Java, so far as Kina Balu has been explored, has not proved to be very marked, though *Orthotomus cucullatus* and the new *Stoparola* show a certain Javan affinity; but there is also a slight connection with the Celebesian avifauna exhibited by the new *Dicæum,* which finds its ally in *D. celebicum*; while the new species of *Hyloterpe* is certainly allied to the Philippine section of the genus.

I have referred to Count Salvadori's paper on the birds of Beccari's expedition (Ann. Mus. Civic. Genov. xiv. pp. 169–253), as affording a good opportunity of comparing the avifauna of the mountains of Sumatra and Borneo.

Fam. FALCONIDÆ.

1. ACCIPITER RUFOTIBIALIS, sp. n.

This may be briefly described as a form of *A. virgatus*, from which it differs in its uniform chestnut under tail-coverts and chestnut thighs. *A. virgatus* has the thighs always much paler rufous or ashy, with more or less remains of dusky cross-bars. The measurements are very small likewise. Total length 9·3 inches, culmen 0·4, wing 5·95, tail 4·2, tarsus 1·8. The young male sent by Mr. Whitehead is moulting direct from its striped plumage into the chestnut-breasted plumage of the adult; this seems never to be the case with true *A. virgatus*, of which the Museum now possesses a large series. It likewise shows uniform rufous thighs. It will probably be found that *A. rufotibialis* is a mountain form of *A. virgatus*, peculiar to Kina Balu. Mr. Gurney agrees with me that *A. rufotibialis* is recognizably distinct from *A. virgatus*.

Fam. CORVIDÆ.

2. DENDROCITTA CINERASCENS, Sharpe, Ibis, 1879, p. 250, pl. viii.

Two specimens of this fine Magpie, described by me from the Lawas River.

3. CISSA MINOR, Cab.; Sharpe, Cat. B. Brit. Mus. iii. p. 86.

The male has the wing 5·2 inches, and the females 5·0–5·3 inches. The Sumatran examples in the 'Catalogue' (*l. c.*) had the wing 4·95–5·35 inches.

Fam. ORIOLIDÆ.

4. ORIOLUS VULNERATUS, sp. n.

Adult male. General colour above glossy blue-black; the lower back somewhat mottled with ashy bases to the feathers; lesser wing-coverts like the back; median and greater coverts, bastard wing, and primary-coverts black, with a narrow edging of glossy blue-black, the primary-coverts margined with crimson near the ends; quills black, edged with glossy black, the primaries with hoary brown; upper tail-coverts like the back; tail-feathers glossy black; crown of head, sides of face, ear-coverts, cheeks, throat, and fore neck glossy black, with an ashy shade on the fore neck; centre of breast glossy crimson, forming a large patch; abdomen, sides of body, and flanks black, slightly varied with greyish bases to the feathers; thighs and under tail-coverts, under wing-coverts, and axillaries black; quills below blackish, rather more ashy along the inner edge. Total length 9 inches, culmen 1, wing 5·1, tail 3·6, tarsus 0·9.

This is a very interesting representative of *O. sanguinolentus* of Java and *O. consanguineus* of Sumatra. The reflexion of the upper plumage has more of a green gloss than in either of the allied species, and it differs in the amount of red on the primary-coverts, the three species being easily distinguishable as follows:—

a. Primary-coverts entirely crimson	*consanguineus.*
b. Primary-coverts only partially crimson.	
*a*¹. Outer primary-coverts entirely black; inner ones broadly edged with crimson................	*sanguinolentus.*
*b*¹. Outer primary-coverts narrowly fringed with dull crimson; inner ones entirely black	*vulneratus.*

Fam. CAMPOPHAGIDÆ.

5. GRAUCALUS NORMANI, sp. n.

Adult male. General colour above dark slate-grey; wing-coverts like the back, the greater coverts lighter and more ashy; bastard wing black; primary-coverts and quills black, edged externally with slate-grey; the inner secondaries externally entirely pale ash-grey, like the greater coverts; upper tail-coverts like the back; tail-feathers black, edged with slate-grey, the two centre feathers dull grey for two thirds of their length, the outer ones tipped with ashy; crown of head dark slate-grey, a little deeper in shade than the back; forehead, eyebrow, sides of crown, ear-coverts, cheeks, and throat glossy blue-black, shading off into slate-colour on the fore neck; remainder of under surface of body dark slate-grey, like the back; thighs, under tail-coverts, under wing-coverts, and axillaries like the breast; quills below dusky, light ashy

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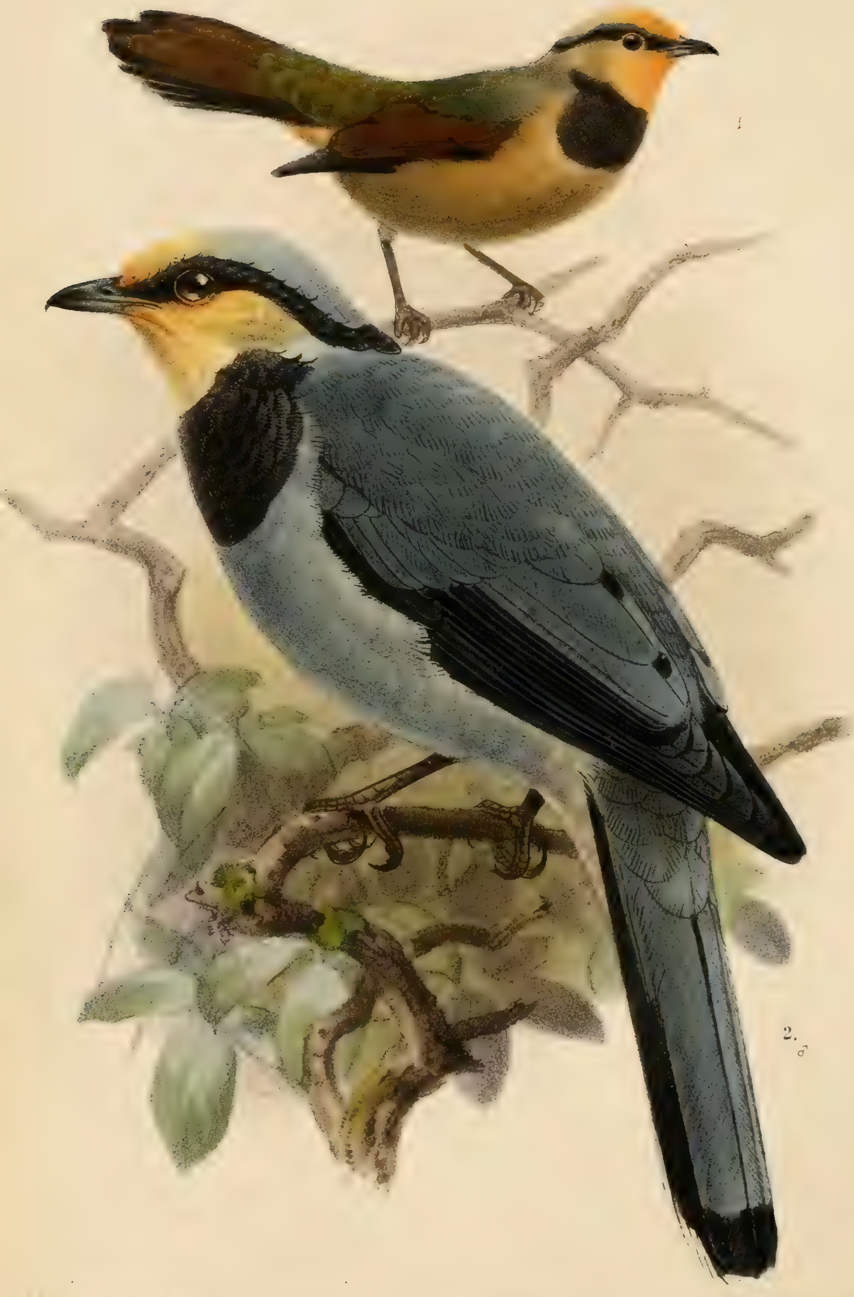

J. G. Keulemans del. et lith.

Mintern Bros. imp.

CHLAMYDOCHAERA JEFFERYI. 1 ♀, 2 ♂.

along the inner web. Total length 10·4 inches, culmen 1, wing 5·9, tail 4·1, tarsus 1.

Adult female. Similar to the male, but without any black on the forehead or throat; the lores, feathers round the eye, sides of face, and ear-coverts glossy black. Total length 10 inches, culmen 0·95, wing 5·55, tail 4, tarsus 0·9.

This species must be very similar to *G. melanocephalus*, Salvad. (*t. c.* p. 206), but is evidently different on account of its grey crown. I have named it after my friend Mr. G. C. Norman, from whom I have received material assistance in ornithological work at the British Museum during the past two years.

6. PERICROCOTUS MONTANUS, Salvad. *t. c.* p. 205.

Of this species Mr. Whitehead has sent a pair, which I refer to Salvadori's species until I have the opportunity of comparing Sumatran and Bornean examples. Count Salvadori described the species from a female bird, and the specimen now received fully bears out the characters assigned to it by its describer. The male resembles *P. solaris* very closely, but is altogether more richly vermilion and not so orange, and has no yellow on the throat, as in that species.

CHLAMYDOCHÆRA, gen. n.

Chlamydochæra, generi "Edoliisoma" dicto maxime affinis, sed primario primo abbreviato et picturâ insignissimâ et insolitâ facile distinguenda.

7. CHLAMYDOCHÆRA JEFFERYI, sp. n. (Plate XIII.)

Adult male. General colour above dark French grey; wing-coverts like the back, the greater series rather paler externally, with concealed black bases; bastard wing black, externally grey near the base; primary-coverts and quills black, with a concealed grey speculum near the base of the outer webs of the primaries; inner secondaries French grey, like the back, with a conspicuous black patch on the inner web; upper tail-coverts like the back; centre tail-feathers French grey, with a narrow white tip, before which is a subterminal band of black; remainder of feathers black tipped with white, increasing in extent towards the outer one, all more or less grey towards the base; crown of head paler French grey, the forehead ochreous buff, a wash of which colour pervades the crown; lores and a broad eyebrow black, continued along the sides of the crown and joining on the nape; eyelid black in front, white on the lower edge; ear-coverts and sides of face ochreous buff, as well as the cheeks and throat, paler on the hinder part of the ear-coverts, and on the sides of neck inclining to buffy grey; fore neck and chest black, forming a large plastron; the feathers of the lower throat white tipped with black, the white forming an indistinct collar; remainder of under surface of body light French grey, washed with ochreous buff, especially towards the lower abdomen and vent; thighs dark grey; under tail-coverts pale ochreous buff, with grey bases; under wing-coverts grey, washed with ochre; axillaries dark slate-grey, the long ones tipped with white; quills below black, with large white spots near the base of the inner web. Total length 9 inches culmen 0·75, wing 4·5, tail 3·7, tarsus 1·05.

The *adult female* differs in being brown above, washed with ashy grey, the inner secondaries and the centre tail-feathers reddish brown, instead of grey, the marking being the same. There is less grey on the head, which is nearly all ochreous buff, with a grey tinge towards the nape; the reddish ochre-colour on the sides of the face and throat is richer than in the male. The under surface of the body is deep ochreous brown where the male is grey. Total length 8·7 inches, culmen 0·75, wing 4·2, tail 3·35, tarsus 1.

I have named this species after Mr. Jeffery Whitehead, the traveller's father, by whose aid and encouragement Mr. John Whitehead has been enabled to carry out his ornithological expeditions.

Fam. MUSCICAPIDÆ.

8. TARSIGER HODGSONI (Moore); Sharpe, Cat. B. iv. p. 258.

I cannot see the slightest difference between the pair sent by Mr. Whitehead and a pair collected in Sikkim by Mandelli; and this is the more curious as no one had previously found the species out of the Himalayas, where its range is also very limited, extending merely from Nepal to Sikkim. It has not as yet been met with in Tenasserim, the Malayan peninsula, or Sumatra, and the reappearance of the species in Borneo is rather surprising.

9. RHIPIDURA ALBICOLLIS (V.); Sharpe, *t. c.* p. 317.

Adult birds, which I cannot separate from Tenasserim specimens. This species is new to Borneo, but occurs in a slightly darker form (*R. atrata*, Salvad.) in Sumatra.

10. HEMICHELIDON CINEREICEPS, sp. n.

Adult male. General colour above reddish brown, inclining to clear chestnut on the lower back, rump, and upper tail-coverts; lesser wing-coverts dusky black, edged with the same colour as the back; median and greater coverts blackish, edged with pale chestnut; bastard wing, primary-coverts, and quills blackish, the first primary and the inner secondaries edged with pale chestnut; tail-feathers dusky brown, with a good deal of chestnut on the inner webs of all but the two centre ones, increasing towards the outer feathers, which are all but entirely chestnut, with a little dusky brown at the ends; crown of head and hind neck dark ashy grey; lores whitish with a tawny tinge; eyelid conspicuously white; ear-coverts, sides of face, and cheeks dark ashy brown, with a rufous tinge, the ear-coverts streaked with fulvous shaft-lines; throat entirely white; sides of neck ashy grey; fore neck and under surface of body clear tawny rufous, more dingy on the fore neck and breast, the sides of the latter rufous brown; lower abdomen pure white; sides of body and flanks, thighs, and under tail-coverts clear bright tawny rufous; under wing-coverts and axillaries dark rufous brown, the lower ones and the edge of the wing clear tawny; quills below dusky, rufous along the inner edge. Total length 5 inches, culmen 0·45, wing 2·7, tail 1·9, tarsus 0·5.

This new species differs from *H. ferruginea* in having the crown and sides of face dark ashy grey.

11. RHINOMYIAS RUFICRISSA, sp. n.

Adult male. General colour above ruddy brown, more clearly rufescent towards the lower back and rump; lesser and median coverts like the back; greater coverts, bastard wing, primary-coverts, and quills dusky brown, edged with ruddy brown like the back; the secondaries externally reddish brown, the innermost with indistinct dusky cross bars; upper tail-coverts and tail-feathers rufous, more distinctly chestnut on the margins; crown of head rather more olive-brown than the back; lores dull whitish, with an ashy shade above them; feathers round eye and ear-coverts brown, rather more ashy near the cheeks, which are dull ashy; throat white; sides of neck brown; fore neck, breast, sides of body, and flanks ashy grey, the latter washed with brown; abdomen white; thighs brown; under tail-coverts pale rufous; under wing-coverts and axillaries pale brown, with ashy bases; quills below dusky, pale tawny along the inner edge. Total length 6 inches, culmen 0·65, wing 3·05, tail 2·2, tarsus 0·65.

Adult female. Not different from the male. Total length 5·6 inches, culmen 0·65, wing 2·8, tail 2·1, tarsus 0·6.

Differs from *R. ruficauda*, Sharpe, in having olive-brown ear-coverts, brown axillaries and under wing-coverts, and especially in its rufescent (not white) under tail-coverts.

12. CRYPTOLOPHA MONTIS, sp. n.

Adult male. General colour above dull olive-green, a little more yellow on the lower wings and upper tail-coverts, the latter being olive-green with yellow tips; lesser wing-coverts blackish, with dull olive-yellow ends; median and greater coverts blackish, edged with olive-green and tipped with yellow, forming a double wing-bar, the second one rather yellowish white; bastard wing, primary-coverts, and quills blackish, edged with olive-green, rather more yellow on the margins of the primaries; tail-feathers dusky ashy brown, edged with olive-green, with a narrow whitish tip to the outer ones; crown of head, occiput, and nape chestnut, extending on to the hind neck; sides of crown also chestnut, with a broad band of black running down the crown from above the eye to the sides of the neck; lores yellowish; eyelid white; ear-coverts and sides of face chestnut; cheeks bright yellow, becoming rufous posteriorly; throat and under surface of body bright yellow, with a wash of rufous on the sides of the upper breast; thighs and under tail-coverts, under wing-coverts, and axillaries bright yellow, the greater series of under wing-coverts with white bases; quills below dusky, yellowish white along the inner edge. Total length 3·6 inches, culmen 0·4, wing 2, tail 1·5, tarsus 0·65.

The nearest ally of this species is *Cryptolopha castaneiceps* (Moore) (*cf.* Sharpe, Cat. B. iv. p. 404); but it is easily recognized by its chestnut ear-coverts and entirely yellow under surface.

13. CRYPTOLOPHA SCHWANERI (Blyth); Sharpe, *t. c.* p. 403.

I give a detailed description of a pair of this rare Flycatcher, the male of which was previously unknown.

Adult male. General colour above dull olive-yellow, a little brighter towards the rump; lesser wing-coverts like the back; median and greater coverts light brown, edged with pale olive-yellow; bastard wing and primary-coverts light brown, fringed with olive-yellow; quills brown, the primaries edged with yellow, the secondaries externally yellow, lighter than the back; upper tail-coverts brighter yellow than the back; tail-feathers brown, edged with dull olive-yellow, the inner webs conspicuously pale tawny buff along the margins of all but the centre feathers; crown of head dull ashy, washed with olive towards the nape; lores dull ashy, surmounted by a narrow white eyebrow, running from the base of the nostrils to the sides of the occiput; feathers round eye whitish; ear-coverts light ashy grey, with a slight wash of olive-yellow; cheeks also ashy, white on the fore part; throat also white, tinged with yellow towards the fore neck; remainder of under surface of body bright yellow, a little more olive on the sides of the upper breast; thighs and under tail-coverts also bright yellow; under wing-coverts and axillaries yellow, with white bases; quills below dusky, light tawny along the inner edge. Total length 4·1 inches, culmen 0·45, wing 2·15, tail 1·75, tarsus 0·7.

Adult female. Similar to the male in plumage. Total length 4 inches, culmen 0·45, wing 1·9, tail 1·5, tarsus 0·65.

14. STOPAROLA CERVINIVENTRIS, sp. n.

Adult male. General colour above blue as far as the upper tail-coverts; lesser wing-coverts brighter blue, inclining to cobalt; median and greater coverts blackish, edged with dull cobalt; bastard wing black, with a slight blue edging; primary-coverts and quills black, edged with bright blue, clearer and paler on the outer webs of the inner secondaries; upper tail-coverts black; tail-feathers black, edged with blue, all but the two centre feathers with broad white bases; crown of head like the back, with a black band across the forehead, this succeeded by a band of silvery cobalt, extending backwards above the eye; eyelid, and feathers above and round the eye, black; ear-coverts and cheeks deep blue, the latter black anteriorly, as well as the chin; throat and under surface of body blue, the lower breast washed with hoary whitish edges; abdomen and under tail-coverts light fawn-buff, increasing in depth of colour on the latter; sides of body and flanks ashy blue, the lower flanks pale fawn-colour; thighs blue, with whitish margins; under wing-coverts and axillaries pale fawn-buff, the edge of the wing blue; quills below dusky, ashy whitish on the inner edge.

Of the same group as *Stoparola indigo* of Java and *S. ruficrissa* of Sumatra, but distinguished from both by the rufescent abdomen.

Fam. TURDIDÆ.

15. MYIOPHONEUS BORNEENSIS, H. H. Slater, Ibis, 1885, p. 123.

The characters which Mr. Slater has given for this species are apparently those of the immature bird. Mr. Whitehead has sent an adult male and a young female, the latter agreeing with the description of the type. The species is a very distinct one, and apparently finds its nearest ally in *M. blighi*, of Ceylon, but wants the blue shade on the back and breast of the latter. The male measures—Total length 10 inches, culmen 1·2, wing 5·7, tail 3·4, tarsus 1·75.

The female, apparently not fully adult, measures—Total length 10 inches, culmen 1·3, wing 5·75, tail 3·3, tarsus 1·8.

Fam. PYCNONOTIDÆ.

16. CHLOROPSIS FLAVOCINCTA, sp. n.

Adult male. General colour above bright grass-green; lesser wing-coverts bright cobalt-blue, forming a shoulder-patch; median and greater coverts externally green like the back, blue in the centre of the feather; bastard wing and primary-coverts bright blue, dusky blackish on the inner web; quills black, externally bright blue, the secondaries duller blue on the outer web, which is green like the back, the inner secondaries entirely green; upper tail-coverts like the back; tail-feathers dull blue, more or less distinctly edged with green; crown of head more yellow than the back, becoming slightly greener towards the nape, which is like the back; base of forehead bright yellow, extending backwards in a short streak above the eye; lores and feathers below the eye black, extending downwards in a well-defined line, and embracing the anterior half of the ear-coverts and cheeks; throat also black, this large patch being succeeded by yellow, which skirts the black from the eye across the sides of the face and joins on the fore neck; hinder ear-coverts and hinder cheeks washed with green; on the fore part of the cheeks a small streak of purplish blue; under surface of body from the chest downwards lighter and more emerald-green, washed with yellow; the sides of body, flanks, thighs, and under tail-coverts greener; under wing-coverts and axillaries pale bluish green, the edge of the wing brighter blue; quills below blackish, ashy along the inner edge. Total length 7 inches, culmen 0·75, wing 3·65, tail 2·65, tarsus 0·75.

Compared with five specimens of *C. viridinucha*, this new species is distinguished at a glance by its yellow instead of emerald-green under surface. The blue on the bastard wing and primary-coverts is of a different shade, being light cobalt instead of purplish blue.

17. CHLOROPSIS KINABALUENSIS, sp. n.

Adult female. General colour above green; lesser wing-coverts glossy cobalt-blue, forming a shoulder-patch; median coverts green; greater coverts also green, with lighter olive-green edges; bastard wing and primary-coverts blue; quills black, externally cobalt-blue, the secondaries green on their outer edges, the inner ones entirely green like the back; upper tail-coverts like the back; tail-feathers dull blue, with a greenish margin to most of them; crown of head emerald-green, a little duller towards the nape; forehead rather brighter emerald-green; lores, eyelid, feathers below the eye, fore part of cheeks, and throat black; ear-coverts and hinder cheeks bright emerald-green, skirting the black throat and forming a green collar on the lower throat; remainder of under surface from the fore neck downwards light greenish yellow; the sides of body and flanks more of a grass-green; thighs and under tail-coverts light grass-green; under wing-coverts and axillaries light bluish green, the edge of the wing blue; quills below dusky blackish, the inner edge ashy grey. Total length 7 inches, culmen 0·7, wing 3·45, tail 2·6, tarsus 0·75.

Mr. Whitehead marks the specimen sent as a *female*, and he is so careful in noting the sexes of his captures that I suppose he is right. If it should turn out to be a male, its nearest ally is *C. nigricollis* of Java, but that has yellow skirting the throat (not emerald-green) and the fore neck is golden yellow, of which there is no trace in the Kina-Balu bird. The only female birds with which this new species can be compared would be those of *C. aurifrons* and *C. malabarica*, but they have purplish throats, besides many other differences.

18. HEMIXUS CONNECTENS, sp. n.

Adult male. General colour above earthy brown, slightly washed with olive on the lower back and rump, which are very full-feathered; lesser wing-coverts brown, like the back; median and greater coverts olive-yellow; bastard wing and primary-coverts darker brown, slightly washed with olive; quills dark brown, externally washed with olive-yellow, more broadly on the secondaries, the inner ones being entirely of the latter colour; upper tail-coverts olive-yellow; tail-feathers olive-yellow, browner on the inner web; crown of head crested, brown like the back, the feathers lanceolate and with ashy tips; lores, sides of face, ear-coverts, and cheeks brown; throat white; lower throat and fore neck ashy brown, extending over the upper breast; lower breast and abdomen white; sides of body and flanks ashy brown, the latter slightly washed with olive-yellow; thighs ashy brown; under tail-coverts clear yellow; under wing-coverts and axillaries white, with a tinge of yellow; quills below dusky blackish, ashy white along the inner edge, with a tinge of yellow. Total length 7·5 inches, culmen 0·85, wing 3·75, tail 3·1, tarsus 0·65.

A very distinct species, recalling the general appearance of *H. cinereus*, but having the olive-yellow tail and wings of the *H. flavala* section of the genus. It is in fact intermediate between the two sections noticed in the 'Catalogue of Birds' (vol. vi. pp. 48, 49).

Fam. TIMELIIDÆ.

19. PHYLLERGATES CUCULLATUS (Temm.); Sharpe, Cat. B. Brit. Mus. vii. p. 229.

A single damaged specimen appears to belong to this species, but it is very difficult to determine it. At any rate, no example of this genus has been previously found in Borneo.

20. STAPHIDIA EVERETTI, sp. n.

Adult male. General colour dull ashy grey, with white shaft-streaks to the feathers of the mantle; lesser and median coverts brown; greater coverts dusky, externally brown; bastard wing, primary-coverts, and quills dusky blackish, edged with brown, the inner secondaries entirely brown, with whitish shaft-lines; upper tail-coverts brown, with ashy margins; tail-feathers blackish, edged with brown, the four outer feathers tipped with white, increasing greatly towards the outer one; crown of head and hind neck dull rufous; lores and eyelid white; ear-coverts rufous, like the crown; cheeks, throat, and under surface of body white; sides of neck ashy grey, like the back; a few brown streaks on the cheeks and on the malar line; thighs ashy grey; under tail-coverts, under wing-coverts, and axillaries white; quills below blackish, whitish along the inner edge. Total length 5·2 inches, culmen 0·45, wing 2·45, tail 2·3, tarsus 0·65.

Adult female. Similar in plumage to the male. Total length 5 inches, culmen 0·4, wing 5, tail 2·2, tarsus 0·65.

Resembles *Staphidia castaneiceps* (Moore), *cf.* Sharpe, Cat. B. vii. p. 616; but differs in its entirely rufous crown and nape, the ashy margins to the frontal feathers of *S. castaneiceps* not being visible in *S. everetti.*

Named in honour of Mr. Alfred Everett, whose scientific work in Borneo and the Philippines has hardly met with the appreciation to which it seems entitled.

21. MIXORNIS MONTANA, sp. n.

Adult female. General colour above reddish brown, with a strong shade of ashy olive, especially on the mantle and hind neck, the latter having sundry dusky streaks; the feathers of the lower back and rump very long and fluffy; lesser wing-coverts like the back; median and greater coverts dull chestnut; bastard wing, primary-coverts, and quills dusky brown, externally dull chestnut, more conspicuous on the secondaries; upper tail-coverts reddish brown; tail-feathers blackish, externally washed with rufous brown; crown of head reddish brown, streaked with obscure blackish shaft-streaks, the base of the forehead and lores ashy blackish; feathers round eye and ear-coverts dull ashy, washed with rufous and having obscure dusky streaks; cheeks blackish, streaked with white, with which the feathers are edged; throat and fore neck white, washed with yellow and strongly marked with triangular spots of black, more longitudinal on the latter; breast pale sulphur-yellow, streaked with dusky blackish; abdomen rather whiter; sides of body and flanks uniform ashy olive-brown; thighs brown, with hoary whitish edges; under tail-coverts dull sulphur-yellow; under wing-coverts and axillaries clear sulphur-yellow; quills below dusky, ashy along the inner edge. Total length 5·6 inches, culmen 0·65, wing 2·45, tail 2, tarsus 0·85.

This species is evidently closely allied to *Mixornis cagayanensis* of Guillemard (P. Z. S. 1885, p. 419), but differs, apparently, in its yellow under wing-coverts. The plate of the latter (pl. xxv.) is very inaccurate, scarcely a single character mentioned by Dr. Guillemard being visible in the figure.

22. STACHYRIS BORNEENSIS, sp. n.

Adult male. General colour above dark olive-brown, a little more rufescent on the upper tail-coverts; lesser wing-coverts like the back; median and greater coverts dusky brown, edged with the same colour as the back, a little more fulvescent on the outer ones; bastard wing and primary-coverts blue, like the rest of the wing-coverts; quills dusky brown, edged with reddish brown, inclining to olive-brown towards the base of the outer webs; upper tail-coverts more rufous brown than the back; tail-feathers dusky brown, rufous brown on the edges, with dusky cross-markings under certain lights; crown of head dusky olive-brown, streaked with hoary-grey edges to the feathers, producing a striped appearance towards the forehead; along the sides of the crown a broad streak of black, followed by a greyish eyebrow, which becomes paler posteriorly, the hinder part of the black band being skirted by hoary streaks; lores dull ashy; feathers in front of and round the eye blackish; ear-coverts dusky brown, the fore part blackish, as well as a streak below the eye; throat and cheeks blackish, washed with ashy, with a broad white streak on the fore part of the cheeks; sides of neck and under surface of body ochreous buff, with paler shaft-streaks; abdomen light ashy; sides of body and flanks, thighs, and under tail-coverts brown, with an ochreous tinge; under wing-coverts and axillaries ochreous brown, the edge of the wing ashy; quill below dusky, edged with ochreous brown on the inner edge. Total length 5·3 inches, culmen 0·7, wing 2·5, tail 2·25, tarsus 0·85.

Differs from *S. nigriceps* in having a black bill, grey (not white) eyelid, and in having the head more uniform brown, less streaked with hoary grey.

23. Stachyris poliocephala, Temm.; Sharpe, Cat. B. Brit. Mus. vii. p. 534.

An adult male from Kina Balu agrees with others from Malacca.

24. Turdinus canicapillus, sp. n.

Adult female. General colour above dull tawny brown, the mantle and upper back with distinct paler shaft-lines; lesser and median coverts like the back; greater coverts dusky brown, externally chestnut; bastard wing and primary-coverts tawny brown, internally dusky; quills blackish, externally chestnut, lighter and more tawny on the primaries; upper tail-coverts like the back; tail-feathers reddish brown, more decidedly rufous on the margins; crown of head dark ashy, with a narrow whitish shaft-line to each feather, the shaft-stripes on the forehead more fulvescent; lores and an indistinct eyebrow of ashy white, the feathers of the latter with narrow white shaft-lines; ear-coverts light tawny rufous, with paler shaft-lines; cheeks and throat white, with a few dusky streaks on the fore neck, which is pale tawny; breast and abdomen white; sides of body and flanks conspicuously tawny rufous; thighs also tawny rufous; under tail-coverts tawny rufous, white at the base; under wing-coverts and axillaries light rufous; quills below dusky, pale fulvous along the inner edge. Total length 5·2 inches, culmen 0·65, wing 2·3, tail 2·05, tarsus 1.

The male exactly resembles the female.

This species is closely allied to *T. sepiarius*, but differs in having a distinct eyebrow streaked with white, and more especially in the colour of the breast and sides of the body, which are bright tawny rufous.

Fam. HENICURIDÆ.

25. Henicurus leschenaulti (V.); Sharpe, Cat. B. Brit. Mus. vii. p. 313.

Apparently identical with Javan specimens in the British Museum.

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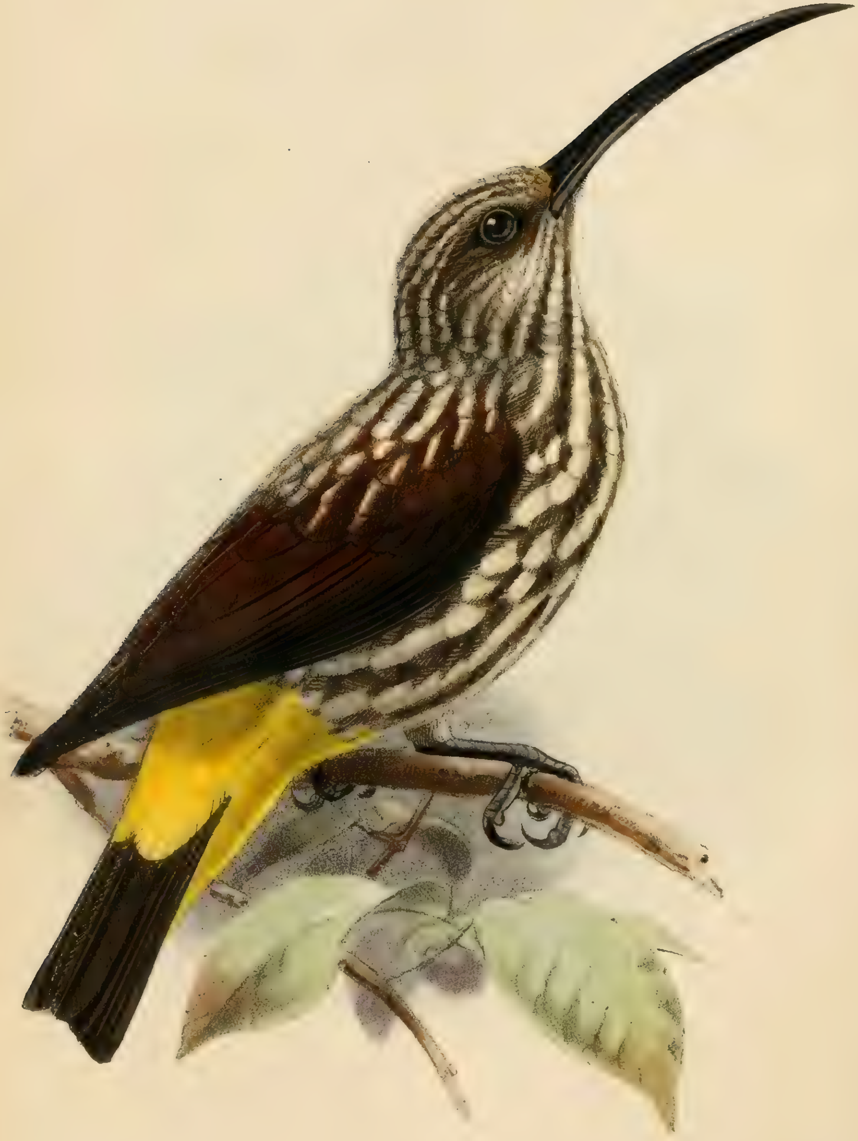

J. G. Keulemans del. et lith.

Mintern Bros. imp.

ARACHNOTHERA JULIÆ.

Fam. LANIIDÆ.

26. HYLOTERPE HYPOXANTHA, sp. n.

Adult male. General colour above dull olive-yellow, with a little tinge of brighter yellow on the rump; lesser wing-coverts dusky, with greenish margins; median and greater coverts dusky, with greenish edges, some of the outer ones rusty brown on the outer webs; bastard wing dusky; primary-coverts dusky, margined with greenish; quills dusky, with yellowish-green edges, the primaries ashy towards the ends, the secondaries rusty towards the ends of the outer webs, the innermost almost entirely rusty brown; upper tail-coverts yellowish green; tail-feathers blackish, edged with olive-green; crown of head like the back, a little brighter olive-yellow towards the forehead and over the eye; lores dark ashy; eyelid, sides of face, and ear-coverts olive-yellow, with a reddish tinge on the hinder margin of the latter; cheeks and under surface of body bright yellow, duller and more olive on the lower throat and fore neck, as well as on the sides of body and flanks; thighs and under tail-coverts yellow; under wing-coverts and axillaries white, edged with bright yellow; edge of wing bright yellow; quills below dusky, ashy whitish on the inner edge. Total length 5·8 inches, culmen 0·65, wing 3·25, tail 2·25, tarsus 0·75.

This species belongs to the section of the genus containing *H. sulfuriventer* and *H. philippinensis*, but differs in its entirely yellow under surface.

27. PTERYTHIUS ÆRALATUS, Tickell.

Pteruthius cameranoi, Salvad. *t. c.* p. 232.

The pair sent by Mr. Whitehead seems to me to be absolutely inseparable from Tenasserim specimens of *P. æralatus*.

Fam. NECTARINIIDÆ.

28. ARACHNOTHERA JULIÆ, sp. n. (Plate XIV.)

Adult male. General colour above brown, longitudinally streaked with white, more broadly on the mantle, where the white expands slightly towards the end of the feathers; scapulars like the back; wing-coverts uniform dark brown, as also the bastard wing, primary-coverts, and quills, the latter blackish; lower rump and upper tail-coverts bright yellow; tail-feathers uniform blackish brown; crown of head like the back; lores and feathers round eye uniform brown; ear-coverts and sides of neck brown, narrowly streaked with white; cheeks hoary white, streaked with brown edges to the feathers; throat and under surface of body streaked like the upper surface, the white centres to the feathers much broader; thighs white, streaked with brown; vent and under tail-coverts bright yellow; under wing-coverts and axillaries brown, with longitudinal whitish centres; quills below dark brown, ashy brownish along the inner edge. Total length 7 inches, culmen 2, wing 3·4, tail 2, tarsus 0·7.

Fam. MELIPHAGIDÆ.

29. ZOSTEROPS AUREIVENTER, Hume; Sharpe, Cat. B. Brit. Mus. ix. p. 163.

Not to be separated from a Tenasserim typical specimen.

Fam. DICÆIDÆ.

30. DICÆUM MONTICOLUM, sp. n.

Adult male. General colour above glossy purplish blue; lesser wing-coverts like the back; median and greater coverts, bastard wing, and primary-coverts black, edged with purplish blue; quills black, the secondaries edged with purplish blue; upper tail-coverts like the back; tail-feathers blue-black; crown of head glossy purplish blue, like the back; lores, sides of face, ear-coverts, and cheeks blackish, slightly glossed with purplish blue; chin whitish; throat, fore neck, and breast bright scarlet, followed by a large patch of dark ashy on the lower breast and abdomen; sides of upper breast dark slaty grey; abdomen ashy, slightly washed with olive, yellowish white towards the vent; sides of body and flanks dull olive-yellow; thighs dark ashy; under tail-coverts pale saffron-yellow; under wing-coverts and axillaries white; quills below blackish, ashy along the inner edge. Total length 3·7 inches, culmen 0·4, wing 1·95, tail 1·15, tarsus 0·5.

Extremely close to *D. sulaense*, Sharpe (Cat. B. x. p. 24), and only differing in its more steel-blue upper surface, grey sides of the breast, and clearer yellow under tail-coverts. It is larger than *D. celebicum*, and is blue instead of purple above.

Fam. FRINGILLIDÆ.

31. CHLORURA HYPERYTHRA, Reich.; Salvad. Orn. Papuasia &c. ii. p. 443.

Adult male. General colour above bright grass-green; lesser wing-coverts like the back; median and greater coverts black, externally green, like the back; bastard wing and primary-coverts black, fringed with green; quills black, edged with somewhat lighter green fringes on the primaries, the secondaries externally like the back; upper tail-coverts like the back; centre tail-feathers olive-green, with black bases, the remainder black edged with green, the outermost with an ashy greenish spot at the end; forehead black, succeeded by a blue crown, the hinder part of the crown like the back; lores, eyebrow, feathers round the eye, ear-coverts, cheeks, throat, fore neck, and breast pale tawny, deeper on the fore neck and breast; abdomen light ochreous buff, washed with green; sides of body and flanks light grass-green; thighs and under tail-coverts deeper ochreous buff; under wing-coverts and axillaries light tawny buff, like the breast; quills below blackish, ashy rufous along the inner edge. Total length 4 inches, culmen 0·45, wing 2·3, tail 1·0, middle tail-feathers 1·15, tarsus 0·65.

The *adult female* is very similar to the male, but is everywhere duller in colour, with less blue on the crown, and the black on the forehead less pronounced. Total length 4·1 inches, culmen 0·45, wing 2·35, tail 1·2, tarsus 0·65.

This species was described by Reichenbach as from New Guinea (*cf.* Salvad. Orn. Papuasia, &c. ii. p. 443). The two sexes are here described for the first time.

Fam. EURYLÆMIDÆ.

32. PSARISOMUS DALHOUSIÆ, Jameson.

Psarisomus psittacinus (S. Müll.); Salvad. Ann. Mus. Civic. Genov. xiv. p. 198.

New to Borneo. Apparently identical to the smallest particular with specimens from Tenasserim and the Eastern Himalayas. Count Salvadori has also recorded it from Sumatra, where it was likewise found by Solomon Müller many years ago. Count Salvadori's supposition that Müller's name of *psittacinus* is anterior to that of *dalhousiæ* does not seem to me to be justified, for Jameson published the latter in January 1835 (Mem. Wern. Soc. Edinb. vii. p. 472), and the page of the 'Tijdschrift' (p. 349) must surely point to a later publication.

33. CALYPTOMENA WHITEHEADI, Sharpe, P. Z. S. 1887, p. 558.

This, the finest of all Mr. Whitehead's discoveries, has already been described by me (*l. c.*).

34. BAMBUSICOLA HYPERYTHRA, Sharpe, Ibis, 1879, p. 266.

Two female birds sent by Mr. Whitehead belong, apparently, to this species, which was discovered by Mr. Treacher on the Lawas River. The eyebrow and sides of face in the original specimen were dark grey, and in the two individuals now sent these parts are rufous; but these differences are probably sexual.

XLVI.—*Notes upon the Northern Limit of the Italian Sparrow* (Passer italiæ). By H. M. WALLIS.

AT Lugano the Italian Sparrow is abundant, breeding under the tiles of houses in company with the Tree Sparrow (*Passer montanus*). It is found at different points on the Piave, north of Belluno, crosses the Italian frontier, and is strongly established at Cortina, but does not penetrate the Ampezzo Thal further north, the last few miles of the latter valley and the Hell Thal being apparently unsuited to it.

At Toblach, in the Pusther Thal, a little place situated at the parting of the waters of the rivers Eisack and Drave, my observations were indecisive. The railway-station south of the town supports a small colony of Sparrows, one of which, under a binocular, at a distance of about fifteen yards, showed no grey upon the crown; yet he was scarcely a typical Italian Sparrow, showing a distinct crease or break in the feathering of the head. The Sparrows of the town itself I failed to identify; those of a small detached hamlet a mile north of it are fairly typical *P. domesticus*, the grey crown rather narrow and the chocolate eyebrows somewhat more pronounced than in Sparrows at Mainz and Munich.

Sparrows were seen, but not identified, at various roadside stations in the Pusther Thal, west of Toblach. At Bruneck there were several nests in the gable of the station, and an Italian Sparrow was seen. Franzenfeste seems to support no Sparrows of any kind; but at Waidbruck, further south, Italian Sparrows are common; there also the Tree Sparrow reappears, building a conspicuous nest under the eaves of the goods-shed. No Sparrows were seen in the valley between Waidbruck and the village of St. Ulrich, in the Dolomites, but at the latter there is a strongish colony of Italian Sparrows.

Following the Brenner northwards, I saw one or two Sparrows at stations north of Franzenfeste, but I failed to identify them; the last was noticed at a little town lying at the southern end of the great loop which the line makes in ascending the upper gradients of the pass. At Innsbruck *P. domesticus* reappears alone.

On the French frontier my notes are scanty. At Hyères, Var, *P. domesticus* prevails, nor did I see anything else; and it would be interesting to discover at what point on the Riviera the races meet. I may add that I have no reason to think that Lugano is the northern limit of the Italian Sparrow in the Tessin; for although I saw none in the Val Sarantina, some one else may be more fortunate.

XLVII.—*Notices of Recent Ornithological Publications.*

[Continued from p. 360.]

90. '*The Auk.*'

['The Auk,' a Quarterly Journal of Ornithology. Vol. IV. No. 2, April, No. 3, July, 1887.]

In the April part Mr. Cory describes *Ramphocinclus sanctæ-luciæ,* from St. Lucia, and *Blacicus martinicensis,* from Martinique; and his "List of the Birds of the West Indies" has now reached to the Columbæ, Gallinæ, and some of the Limicolæ. In the July part he describes as new *Lamprornis hendersoni,* from Old Providence Island, and *Vireosylvia canescens, Icterus lawrencii, Mimus magnirostris, Engyptila neoxena,* and *Dendroica flavida,* all from St. Andrew's Island, in the Caribbean Sea; also, in a later paper, *Euethia grandior* from the former; and a list of the species obtained on these two islands during the winter of 1886–87 is given. Papers by Mr. F. W. Langdon on the mountain-districts of Eastern Tennessee, and Mr. G. B. Sennett on the neighbouring Western North-Carolina Mountains, have an interesting and confirmatory bearing upon Mr. W. Brewster's previous observations in that, ornithologically, little-known country. Dr. Stejneger contributes a supplementary note on the genus *Acanthis,* wherein he states that specimens from Austria prove to be identical with typical British *A. cabaret,* of which *A. rufescens* (Vieillot) is a true synonym. Mr. W. Brewster distinguishes *Symphemia semipalmata inornata, Phalænoptilus nuttalli nitidus,* and *Vireo noveboracensis maynardi* as new subspecies. A paper by Mr. F. C. Browne, reproducing his original notes on some Glossy Ibises obtained in New England in 1850, elicits from Mr. J. H. Sage a copy of the announcement published in the Middletown Conn. 'Sentinel and Witness' of May 21st, 1850, by a Dr. Barratt, who considers it "highly probable" that these "Black Egyptian Ibises . . . . may have been driven to the south by the late storms, after crossing Behring's Straits—having left the valley of the Nile in March, as we suppose" (p. 253). Mr.

W. Lloyd commences a series of notes on about 240 species observed in Western Texas. Mr. Cox's account of the capture in North-eastern New Brunswick of a supposed Turkey, but which proved to be what the Jamaica negro called "Turkey with a surname" (i. e. *Cathartes aura*), is amusing, and appears to be the furthest north on record for this Vulture by some 200 miles. A new subspecies of the Sharp-tailed Sparrow, *Ammodramus caudacutus subvirgatus*, from the head of the Bay of Fundy, is described by Mr. J. Dwight, jun.

Mr. W. E. D. Scott's continuation of his remarks on the avifauna of portions of Arizona calls for no special remark from us. Far otherwise is it with his two harrowing papers upon "The present condition of some of the Bird-rookeries on the Gulf coast of Florida;" and the end of his sad story of slaughter has not yet been told. Wooded islands, where only a very few years ago the Roseate Spoonbill, the Reddish Egret, all the common species of Herons, and the White Ibis, nested in myriads never to be forgotten by those who had visited the favoured spots, were now almost entirely deserted, their former occupants having been exterminated by the "plume-hunters" for the northern market. One dealer alone, at Fort Myers, on the Caloosahatchie, regularly employed from forty to sixty gunners at an average price of 40 cents per plume or flat skin. At a breeding-place of the Reddish Egrets, Mr. Scott found a huge pile of dead, half-decayed birds which had recently been shot from their nests in the trees above, and he counted over 200 from which the back-plumes had been torn away. A small island containing a Brown Pelican's "rookery" was protected by the owner, who proposed to let the unhappy birds rear their young; but one day, during his absence from home, an old French dealer came with a boat and deliberately killed off about 180 old birds as they were feeding their young, which of course died of starvation. Such are merely a few instances of the extermination that is being conducted on a truly American scale (as regards its thoroughness) for the supply of articles required by the exigencies of the female fashion of the day. So long as this fashion lasts, no remonstrances from us or from "Selborne Societies," or from any other source, will, we are well aware, have the slightest effect upon the indirect, but real, instigators of this slaughter; all that can be hoped for is that the freaks of feminine vanity may take some other and less harmful direction.

Under "Notes and News" are some important items of information respecting the American Museum of Natural History of New York City; but these are reserved for a separate heading in our Notices, as being more likely to attract attention there than in the present review.

91. *Barboza du Bocage on new Birds from St. Thomé.*

[Oiseaux nouveaux de l'Ile St. Thomé: par J. V. Barboza du Bocage. Jorn. Acad. Sci. Lisboa, no. xliv. p. 250.]

The species described as new are *Cinnyris newtoni* (near to *C. hartlaubi* of Prince's Island), named after Mr. Francis Newton; and *Prinia molleri*, brought back by M. Moller, a botanist who was exploring St. Thomé.

92. *Bombay Natural History Society's Journal.*

[The Journal of the Bombay Natural History Society. Edited by R. A. Sterndale and E. H. Aitken. Vol. II. nos. 1, 2. Bombay: 1887.]

These two numbers contain several minor papers which it is hardly necessary to enumerate, and "Notes on some Birds seen in a Journey through Persia," by G. J. R. Rayment, A.V.D.

93. *British Association's Report on Migrations in* 1886.

[Report on the Migration of Birds in the Spring and Autumn of 1886. By Messrs. J. A. Harvie-Brown, J. Cordeaux, R. M. Barrington, A. G. More, and W. Eagle Clarke. Eighth Report. 8vo. McFarlane and Erskine, Edinburgh: 1887.]

We are glad to see that our suggestion of last year (Ibis, 1886, p. 516) has been adopted, and that the names of the various stations are given in the present Report, instead of numerals referring to a list on the map. Observations for 1886 have borne good fruit with *Phylloscopus superciliosus* from Sumburgh Head; *Agelæus phœniceus* from the Nash (probably a bird which had escaped from some vessel entering the Bristol Channel); the second Irish example of *Iÿnx torquilla* from Arran Island, co. Galway; the second and third Irish-taken *Muscicapa luctuosa*; and the record of an important immigration of *Dendrocopus major*, a very rare visitor to Ireland. Wings and legs from that country ascribed to the Reed Warbler belong, as we believe, to the Blackcap and Garden Warbler. Condensation and a general abstract are still to be desired; and we heartily endorse Mr. W. Eagle Clarke's suggestion to his colleagues as to the adoption of a united report showing at a glance the significance and importance of each migratory movement, the area covered by it, and the species participating in it. Such errors as Charadri*a*dæ for Charadri*i*dæ, and Col*u*mbidæ for Col*y*mbidæ (Divers) may perhaps be attributed to the printer; but we are sorry to see a member of the B.O.U. defying established custom, if not absolute law, and setting a bad example by persistently spelling the specific names with initial capitals where roman type is employed, although whenever italics are used capitals are not employed.

94. *Capen on the Eggs of the Birds of New England.*

[Oology of New England: a description of the eggs, nests, and breeding-habits of the Birds known to breed in New England, with coloured illustrations of their eggs. By Edwin A. Capen. Folio. Boston, 1886.]

This handsome work contains twenty-five plates and many hundreds of coloured figures which favourably challenge comparison with those in Mr. Seebohm's 'Eggs of British Birds.' An interesting feature is the illustration of an egg of the Heath Hen, the true *Cupidonia cupido* (Linn.), as distinguished from the Western Prairie Hen, *C. pinnata*, Brewster (*cf.* 'Auk,' ii. pp. 80–84). The former species is a remnant of the old stock which was once widely diffused throughout the Eastern States, but is now confined to Martha's Vineyard. The letterpress of this work is excellent. The account of the breeding of *Phalaropus fulicarius* in Maine, in about 45° N. lat., on the authority of Mr. G. Boardman, shows a great extension southwards of its nesting-range as previously set down.

95. *Carazzi on some Italian Birds.*

[Appunti ornitologici. Comunicazione del socio Davide Carazzi. Boll. d. Soc. d. Naturalisti in Napoli, ser. 1, vol. i. fasc. 1, 1887.]

In these notes are recorded the occurrence of two examples of *Falco eleonoræ* near Spezia in 1878, and of *Pterocles alchata* near Leghorn in 1863. The latter is now in the museum at Florence, an apparently overlooked example of a species which had not previously been obtained on the mainland of Italy, as now politically restricted, although one obtained at Nice since its annexation by France is in the Florentine Museum.

96. *Collett on new Norwegian Birds.*

[Om 4 for Norges Fauna nye Fugle fundne i 1885 og 1886. Af Robert Collett. Vidensk. Forhandl. Christiania, 1887, no. 8.]

The four new visitors to Norway are *Turdus atrigularis*, obtained on December 3, 1886, *Pastor roseus* on September 30, 1885, and *Xema sabinii* on October 1, 1886, all from Throndhjemsfjord; and *Ardea purpurea* on June 1, 1886, about 60 kilometres from Christiania.

97. *Dixon (J. H.) on the Birds of Gairloch.*

[Gairloch in North-west Ross-shire: its Records, Traditions, Inhabitants, and Natural History, with a guide to Gairloch and Loch Maree, and a Map and illustrations. By John H. Dixon. 8vo. Edinburgh: 1886.]

In this interesting work Chapter VI. is devoted to a list of the birds of Gairloch, compiled with the aid of Mr. Osgood H. Mackenzie, of Inverness, whose observations extend over many years. The result of this partnership is one of the best local lists that we have ever read, with notes on more than 150 species. The evidence that the Sclavonian Grebe (*Podicipes auritus*) breeds near Gairloch appears nearly conclusive.

98. *Green on Ocean Birds.*

[Ocean Birds. By J. F. Green. With a preface by A. G. Guillemard, and a treatise on skinning Birds by F. H. H. Guillemard. The illustrations by Frances E. Green. 4to. London: 1887. R. H. Porter.]

The author, who is, we believe, a member of the well-known firm of shipowners, and who has made several "round voyages," has endeavoured to produce a work which shall prove interesting and, at the same time, instructive, by giving an account of the birds which may be met with on the way to Australia by the Atlantic and Indian Oceans, and returning round Cape Horn. The writer's own observations are worthy of perusal, and the entire compilation is well conceived; but in execution it falls a little short. Some of the authorities quoted are of no weight, or else they are completely out of date in reference to such a subject; and, as an instance of the latter, when "Yarrell" is quoted, the reference is to the first edition (1843), an epoch at which the most erroneous ideas prevailed respecting the distribution of sea-birds. Transpositions in the numbering of plates ii. and iii. and of heads 6 and 7 in the latter are regrettable; and, much as we wish to speak well of a lady's work, high praise cannot be accorded to the illustrations. A copy of this book in the saloon of every ocean-going ship must necessarily stimulate a taste for observation; but if the MS. had been submitted to some judicious critic it would have been an advantage.

99. *Hartlaub on Birds from Eastern Equatorial Africa.*

[Dritter Beitrag zur Ornithologie der östlich-äquatorialen Gebiete Afrikas. Von Dr. G. Hartlaub. Zoologische Jahrbücher, Jena, Bd. ii. p. 303.]

This is Dr. Hartlaub's third essay on birds collected by Dr. Emin Pacha in various points of his Æquatorial-African dominions, stretching from Ladó to the Albert Nyanza. The collection reached Bremen in 1883, but has been kept in hand awaiting further acquisitions. The species of which specimens are now recorded are about 50 in number, and have exact localities and notes attached to each of them. Several of the novelties have been already described (e. g.

Ptyrticus turdinus, Salpornis emini, &c.); but we now have further *Pentholæa baucis, Mirafra bucolica,* and *Sitagra pelzelni* described as new. Four plates are given, illustrating *Ptyrticus turdinus, Xenocichla orientalis, Ægithalus parvulus, Crateropus tenebrosus, Habropyga nonnula, Lagonosticta œnochroa, Pentholæa clericalis* ad. et jr., *Sitagra pelzelni* ad. et jr., and *Symplectes crocatus.* Several essays are introduced on the different species of Wryneck (*Iÿnx*) and on the African *Ægithali.* Of the latter Dr. Hartlaub recognizes seven species, and takes occasion to remark on the imperfect treatment of this genus in the seventh volume of the British Museum 'Catalogue,' where Dr. Gadow is said to have united three or four distinct species under *Ægithalus capensis.*

100. *Lawrence on new Neotropical Birds.*

[Descriptions of new Species of Birds of the Families *Sylviidæ, Troglodytidæ,* and *Tyrannidæ.* Ann. New York Acad. of Sci. vol. iv. p. 66.]

The species described are :—*Regulus satrapa aztecus,* from the city of Mexico, smaller, with longer and larger bill and darker coloration than true *R. satrapa*; *Troglodytes brachyurus,* from Tenax, Yucatan, akin to *T. intermedius*; and *Octhœca flaviventris,* from South America (precise locality unknown), nearest to *O. gratiosa,* Sclater.

101. *Lorenz on the Birds of the Caucasus.*

[Beitrag zur Kenntniss der ornithologischen Fauna an der Nordseite des Kaukasus. Von Th. Lorenz. Sm. folio. Moscow: 1887.]

This memoir gives an account of the collections and observations made by Herr. Th. Lorenz during three visits to the northern slopes of the Caucasus in 1882 and the following years. On the former the author only reached the steppes at the foot of the mountains, but in the two following years he passed his time in the higher regions, making his headquarters at Kislowodsk, which he reached by the Vladikafkas Railway and by road through Patigorsk. After a general account of the district explored and the birds met with, a systematic essay follows on the 161 species of which examples were obtained. Four of these are new species or subspecies, namely:—*Sturnus caucasicus, Phyllopneuste lorenzii, Mecistura irbii* var. *caucasica,* and *Ruticilla erythrogastra* var. *severzovi.* Seven species are additional to the Caucasian list, namely:—*Nyctale tengmalmi, Phylloscopus nitidus, Sitta krueperi, Lusciola infuscata, Cuculus indicus, Sturnus purpurascens,* and *Locustella nævia.* The following species are figured:—*Ruticilla ochrurus, Sturnus caucasicus, Carpodacus rubicillus, Phylloscopus nitidus, Phyllopneuste lorenzii,* and *Tetrao mlokosieviczi,* male, female, and young of both sexes. Very interesting details are given respecting the last-named species, and its trachea is figured, showing a remarkable diversity from that of *T. tetrix.* Altogether this is a very good piece of work, containing a mass of original personal observations of great importance to students of Palæarctic ornithology.

102. *Macfarland on the Ruby-throated Humming-bird.*

[Nesting-Habits of the Humming-bird, *Trochilus colubris.* By Prof. Wm. Macfarland. Journ. Trenton Nat. Hist. Soc. No. 2, 1887.]

This little paper contains an account of observations made on the nesting and rearing of the young of the Ruby-throated Humming-bird, the only species found in the eastern portion of the United States.

103. *Martin on the Birds of the Brenne.*

[Catalogue des Oiseaux de la Brenne: Ornithologie de l'arrondissement du Blanc. Par René Martin. Extrait du Bull. Soc. Zoologique de France, t. xii. 1887.]

We have seldom perused a treatise by a French ornithologist which has so thoroughly impressed us with a belief in the accuracy of its local details as does the present contribution to the history of the avifauna of a little-known district. Situated in the department of Indre, the Brenne is principally an extensive plain studded with some hundreds of lakes and pools of varying dimensions, interspersed with marshy scrub and woods, which, in the drier portions, attain the rank of forests. Scantily populated and ill cultivated, it may be imagined what attractions such a country must present for resident as well as migratory birds; and we need hardly be surprised at finding that, even after admitting many probable visitors the presence of which has not been absolutely proved, the species obtained in this district remote from the sea are no fewer than 273 in number. Many of the details respecting their food, habits, migration, and distribution are very interesting. It is surprising to learn that *Pernis apivorus* is a resident, and that its numbers have not been observed to receive accessions on migration; on the other hand it appears strange that *Circaëtus gallicus* and *Milvus ictinus* should be rare, while *Aquila pennata* is as yet unknown, in a district apparently so suitable to all three. *Gecinus canus*, generally considered rare in France, is said to be comparatively common in the woods on the left bank of the river Creuse; and the occasional appearance of the Wall Creeper (*Tichodroma muraria*) at Nantes, on the Loire, is to some extent explained when we read that this striking bird is often obtained on migration in the department of Indre. Among the Warblers which arrive to breed are *Cettia cetti* and *Calamodyta aquatica*; and, in a country so suited to their skulking habits, almost all the European Rails are common. No fewer than five species of Terns, including all three of the genus *Hydrochelidon*, breed on the *étangs*; but *Sterna anglica* has not yet been obtained, even as a straggler. M. Martin is evidently a close observer, and, although we know that there are many like him in France, we wish that some of them, for instance, MM. Louis and Etienne Bureau, would follow his example by publishing their experiences.

104. *More's Guide to the Dublin Museum.*

[Science and Art Museum, Dublin. Guide to the Natural History Department.—Series I. Vertebrate Animals. (Recent.) Part I. Mammals and Birds, by Alexander G. More, F.L.S., M.R.I.A., Curator of the Natural History Department. 8vo. Dublin: 1887.]

In this well-designed guide, about twenty pages are devoted to Birds, and contain a wonderful amount of compressed information. In a few lines (sometimes in a couple) Mr. More has succeeded in conveying a good idea of the broad lines of distribution of the 128 families included under the subclass Carinatæ, and the 7 which make up the Ratitæ, with the addition, in some cases, of descriptions sufficient for recognition by visitors to the Museum. Special attention is called to those species which, although more or less frequent in Great Britain, are either absent from, or of very rare occurrence in Ireland, and we believe that several of the latter have been obtained or recorded for the first time by Mr. More himself. In fact, during the twenty years that he has been at the Dublin Museum, ornithology has received his warmest support, although forming but one of the various branches of Natural History under his care. It is therefore with deep regret that we hear of his resignation, owing to severe illness; but it is satisfactory to know that a good ornithologist, Mr. Percy Evans Freke, M.B.O.U., is a candidate for the vacant post.

105. '*Ornis.*'

[Ornis: Internationale Zeitschrift für die gesammte Ornithologie. Herausgeben von Dr. R. Blasius und G. v. Hayek. II. Jahrgang (1886), 4 Heft, III. Jahrgang, 1 Heft (1887). Wien.]

The former of these two Parts contains a long and elaborate article by the President, Dr. Rudolf Blasius, on the migration-routes of the Nutcracker in Europe in the autumn of 1885 and the winter of 1885–86, illustrated by descriptions and figures, to show that there are two forms distinguished by the names of *Nucifraga caryocatactes leptorhynchus,* R. Blasius (*N. macrorhynchus,* C. L. Brehm), with a long slender bill, and *N. c. pachyrhynchus,* R. Blasius (*N. brachyrhynchus,* C. L. Brehm), with a short stout bill. This is followed by the interesting "Third Annual Report on the 175 species of birds observed in Denmark in 1885," compiled by Herr Olaf Winge, and, being written in English, it will be especially useful to some of our readers. Herr Benedict Gröndal communicates notes on 28 species noted in Iceland in 1886; supplemented in Heft 1, for 1887, by a few remarks by Herr

P. Nielsen, from Eyrarbakki, the most interesting being the record of *Turdus merula* there in December 1877. The greater part of Heft 1 (pp. 156) is devoted to the first portion of V. v. Tschusi and K. v. Dalla-Torre's annual report on the birds of the Austro-Hungarian Empire.

106. *Ridgway on a new Plumed Partridge.*

[Description of a new Plumed Partridge from Sonora. 'Forest and Stream,' xxviii. No. 6, March 3, 1887, p. 106.]

This species, named *Callipepla elegans bensoni*, is based on five specimens obtained by Lieutenant Benson, U.S.A., in Sonora; and we notice it in order that the record of its existence should not be buried in a newspaper.

107. *The Ridgway Ornithological Club's 'Bulletin.'*

[The Ridgway Ornithological Club of Chicago, Illinois, U. S. A. Bulletin, Nos. 1, 2. Chicago: 1887.]

We have recently received Bulletin No. 1, bearing date so far back as December 1883, consisting of a paper, originally published in the 'American Field,' on "Bird Migration in the Mississippi Valley," by Messrs. Cooke and Widman, which we have already noticed (Ibis, 1884, p. 37) under the authors' names. Bulletin No. 2, dated 1887, is more than twice as thick, and contains "Notes and Observations on the Ornithology of Corpus Christi, Texas," by J. L. Hancock; two papers by H. E. K. Coale, in one of which he describes *Dendroica æstiva morcomi*, subsp. n., and *Dendroica dugesi*, sp. n.; a "List of Birds Breeding near Mt. Carmel, Illinois," by R. Ridgway; "Notes on the Birds of Southern California and South-western Arizona," by G. Frean Morcom (a countryman of our own), with notes by his collector, Mr. F. Stephens; short papers on *Ammodramus beldingi* and *Dryobates nuttalli*, by B. T. Gault; and an interesting "Contribution to our knowledge of Albinism," by the editor, G. L. Toppan, enumerating 154 species of American birds in which the absence of colouring pigment has been observed. We wish this new serial every success in its now independent career.

108. *Salvadori on Birds from Sumatra and Nias Island.*

[Catalogo delle Collezioni ornitologiche fatte presso Siboga in Sumatra e nell' isola Nias dal Signor Elio Modigliani e descritte da Tommaso Salvadori. Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. iv. p. 514.]

Signor Elio Modigliani was advised by Dr. Beccari to visit the little-known island of Nias, about 80 miles from the west coast of Sumatra, and the result has been a collection containing 62 species. Von Rosenberg, who seems to have been the only previous visitor, recorded 40 other species not obtained by Modigliani. At Siboga, on the west coast of Sumatra, 22 species were procured. Among the birds from Nias Island the following are described as new:—*Syrnium niasense, Miglyptes infuscatus, Terpsiphone insularis, Cittacincla melanura, Calornis altirostris, Gracula robusta, Carpophaga consobrina,* and *Macropygia modigliani.* The series in this fine collection contains 178 specimens from Nias Island.

109. *Saunders's 'List of British Birds.'*

[A List of British Birds, revised to April 1887 by Howard Saunders, F.L.S., F.Z.S., &c. London: 1887.]

In this list, which is printed on one side of the page only, so as to be available for labels if desired, the scientific and the trivial names of all species regarded as "British" are given. The English names of those species of which fewer than six examples have been obtained are printed in italics, while the names of the doubtfully British birds are further enclosed in square brackets. Introduced species, unless they have actually established themselves, like the Red-legged Partridge, are omitted. Those known to have bred in the United Kingdom within the century are distinguished by an asterisk. With few exceptions, the arrangement and nomenclature of the 'B. O. U. Committee's List' are followed; but it will be noticed that the name *Limosa belgica* (Gmel.) is adopted for the Black-tailed Godwit, in place of the specific name *ægocephala,* which has proved to be a synonym of *L. lapponica,* the Bar-tailed Godwit; and a correction by the Rev. Churchill Babington has been accepted by the employment of the properly formed generic term *Podicipes* for the Grebes, instead of *Podiceps*. Lastly, the Order Tubinares is taken away from proximity to the Gaviæ.

110. *Shufeldt's 'Contributions to Science.'*

[Contributions to Science and Bibliographical Résumé of the Writings of R. W. Shufeldt. By their Author. New York: 1887.]

Dr. Shufeldt sends us a copy of a printed list of his various papers and writings since 1881, over a hundred in number, besides others in the press and in preparation, showing a large amount of work accomplished under not very advantageous circumstances.

111. *Sousa on the Birds of Dahomey.*

[Aves de Dahomey par José Augusto de Sousa. Jorn. Acad. Sci. Lisboa, No. xliv. pp. 217–219.]

A first remittance from Mr. Francis Newton to the Lisbon Museum contains sixteen species, none of them new to science, from Saõ de Ajudá and other places in the kingdom of Dahomey; ten of these are included in Dr. Barboza du Bocage's 'Ornithologie d'Angola.'

112. *Stejneger on* Brachyrhamphus perdix.

[On *Brachyramphus* [sic] *perdix* (Pall.) and its nearest Allies. By Leonhard Stejneger. Zeitschr. f. d. gesammte Ornithol. 1886, p. 210.]

A specimen of "Murrelet" received from Kamtschatka has convinced Dr. Stejneger that Pallas's *Cephus perdix* is a perfectly valid species, nearest to *Brachyrhamphus marmoratus* (Gmel.), but resembling *B. brevirostris* (Vig.), usually known as *B. kittlitzii*, in the coloration of its upper parts in summer. A coloured plate of the resuscitated species and full descriptions of it and of the other members of the group are given.

XLVIII.—*Letters, Extracts, Notices, &c.*

We have received the following letters addressed to the Editors of 'The Ibis:'—

Swatow, June 11, 1887.

Sirs,—In Mr. F. W. Styan's article on a collection of birds made by me in Foochow (Ibis, April 1887, p. 215) some misprints have crept in.

Sh*in*kow should be Sh*ui*kow.
Ching Feng L*ung* ,, Chîng Feng L*ing*.
To Feng *Sen* ,, ^{ng}*O* Feng *Ss*u.
(see pp. 216, 218, 222, 230.)

The following should be added to the list of Foochow birds:—

1. Haliaëtus albicilla (?).

Sea Eagles passed in some numbers during last autumn. I have a specimen not yet identified, but which, from descriptions, appears to be of this species.

2. Hypsipetes macclellandi.

Two specimens were shot at the end of February, in the valley of the Min river, about 20 or 30 miles from Foochow.

3. Parus venustulus, Swinh.

One shot near Châng Lo Hsien, a city on the mainland, some 13 miles south-east of Foochow.

4. Cypselus pacificus (?).

Large Swifts occur on the Min river, near Foochow, in April, but are only seen on rainy days.

5. Bubo ignavus.

A couple of young Eagle Owls were obtained about six years ago by Dr. Underwood, of Pagoda Anchorage (the shipping-place of Foochow). He says they were certainly obtained in the neighbourhood. This species seems unknown to the natives.

Liothrix luteus

Has also been obtained near Foochow. A specimen was shot, out of a party of three, at the end of January last.

SUTHORA SUFFUSA (?).

A *Suthora*, as far as I can remember identical with that from Puching mentioned by Mr. Styan, was shot last spring, close to Foochŏw, by Mr. C. W. Campbell.

MICROHIERAX CHINENSIS.

Seems to be not very uncommon in the valley of the Min river, another specimen (this time a male, in fine plumage) having been shot for me by a native sportsman in March last. Mr. Baun also collected three specimens in the neighbourhood of Shuikow, Chîng Feng Ling, &c.

Yours faithfully,
J. DE LA TOUCHE.

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3 Kensington Gardens Square,
July 14, 1887.

SIRS,—With reference to Sir John Campbell-Orde's observation of *Cypselus apus* in North Uist, I may state that this species is an irregular visitor to the opposite coast of Skye, and it has occurred even at St. Kilda, a specimen having been shot in the latter island in May 1886 by Mr. John Mackenzie, of Dunvegan. There is nothing, therefore, surprising in its straying to North Uist. With reference to St. Kilda, I may add that the late schoolmaster, George Murray, informs me that a single example of *Larus glaucus* made its appearance in the bay in November 1886; that the only example of *Larus ridibundus* ever seen at St. Kilda arrived on April 13th, 1887; and that he observed a specimen of *Chelidon urbica* on June 9th.

Yours &c.,
H. A. MACPHERSON.

Direction des Königl. Zoologischen und des
Anthropologisch-Ethnographischen Museums zu Dresden,
July 21, 1887.

SIRS,—Mr. H. Seebohm, in his interesting paper "On the genus *Scolopax*" (The Ibis, 1886, p. 128), remarks of *Scolopax rochusseni*: "The Moluccan Woodcock is confined to the small group of islands *the name of which it bears,* whither it probably emigrated from Japan."

I beg to say that there does not exist, so far as I am aware, a group of islands with the name of Rochussen, but that the species *Scolopax rochusseni* came from the island of Obi major, an island of some importance to the south of the largest Moluccan island called Halmahera (erroneously often designated as Gilolo, which is only a district of Halmahera).

Scolopax rochusseni, from Obi major, was called by Prof. Schlegel (Nederlandsch Tijdschrift voor de Dierkunde, iii. p. 256, 1866) after the Governor-General Rochussen, in the following passage:—

"Nous dédions cette espèce curieuse à Son Excellence le Ministre d'état, M. Rochussen, ancien Gouverneur-général des Indes Néerlandaises et ancien Ministre des Colonies, qui a donné l'élan à l'exploration récente de la Nouvelle-Guinée par l'expédition du bateau à vapeur l'Etna, et en confiant à feu Bernstein la mission honorable de faire des recherches scientifiques dans ces contrées lointaines et presque inconnues."

Yours,
A. B. Meyer.

British Museum (Natural History),
Cromwell Road, London, S.W.
Sept. 6, 1887.

Sirs,—From Mr. Seebohm's article on Horsfield's Woodcock (*anteà*, p. 284) it might be inferred that some of the types of Horsfield's species, formerly in the India Museum, cannot now be found in their present home in the Natural History Museum. I have found the type of the species alluded to by Mr. Seebohm, and I am not aware that any of the Horsfieldian types are actually *missing*, but they are mostly in the same state as the typical example of *Gallinago horsfieldi*, viz. moth-eaten and devoid of feathers. It appears that during the many migrations of the India Museum from Leadenhall Street to Fife House and other places, the birds were always packed up, and the Horsfieldian types, being probably old and imperfectly preserved, were utterly devoured by moths. The gruesome remains were received by us from the India Museum in the condition they now are, and I write this short note of explanation, as otherwise in future years it might be thought that the specimens had been allowed to perish while under my care.

I am, &c.,
R. Bowdler Sharpe.

Sirs,—We were not a little surprised after reading Mr. Seebohm's paper on the "Birds of Natal," in the July No. of 'The Ibis,' to find that in the short period of one month's observation he had been able to arrive at the conclusion (p. 346) that there is not "a shred of evidence" in favour of the theory which we advanced in 'The Ibis' for 1883 respecting the various changes of plumage of *Saxicola monticola.* It will be remembered by those who read our paper that for the greater part of the year 1881 we had the most favourable opportunity of observing the plumage, habits, and nidification of this species, and for upwards of ten months we made a special study of this subject in the field, collecting a very large series of skins in every stage of plumage, which we brought home carefully labelled and in perfect preservation. Having submitted these skins (which are now in Capt. Shelley's museum) to Mr. R. B. Sharpe for examination, and having at the same time looked over the skins in the South Kensington Museum, we had no difficulty, with so large a series before us and the knowledge of the species which we had acquired in the field, in deciding this long-discussed question. Mr. Sharpe, who is ever ready to give assistance in such matters, was good enough to give his careful attention to the subject in our presence, and to view the skins after we had arranged them in order, showing the various changes of plumage, as described subsequently in our paper; and he agreed with us, without hesitation, that our theory was correct, as will be seen by his remarks which followed (p. 337). Now with the above facts fresh in our memory we can hardly be expected to admit that we are entirely wrong, that our time and labours in Natal were therefore wasted, and that Mr. Seebohm's decision, after so little field-experience, is correct. Mr. Seebohm's favourite theory of interbreeding is all very well in some cases, but it certainly does not apply in this instance, as there is only one form of hen bird.

In our paper, at p. 336, line 13, there is, unfortunately, a clerical error, which we corrected in 'The Ibis' for October 1884, p. 466, and to which we again call attention. Under the head 6th stage, *for* "We consider stages 6 and 7 to be of about the same period of the bird's life," *read* "We consider stages 5 and 6," &c.

Mr. Seebohm misunderstands us in saying "It is alleged that the brown of the underparts changes first to white, *then to black*, &c.," as will be seen by referring to the paragraph below the 9th stage, in which it is clearly stated that the brown or blackish brown changes to pure white, the lower parts never change, so far as our knowledge goes, from white to black afterwards. In some instances, however, the white head is gained before the white belly (6th stage), while in others the white belly is assumed before the head changes as described in the 5th stage, the result being that at this stage birds which have not shed their abdominal feathers are still black below, others which have commenced the moult are black with traces of white, and those which have completed it are white. Stages 5 and 6 are therefore very similar, the difference between them being that in the 5th stage the bird has assumed the white lower parts, and in the 6th it has not completed the moult in respect to those parts. The 6th stage is not very common, and we only obtained a few examples in that plumage, and most of those showed traces of white below, as previously stated, showing the gradual change from black to white. We consider stages 5 and 6 to be two phases of the one stage, and they might perhaps have been advantageously united. Mr. Seebohm considers that it would be as logical to make the variations nineteen as nine in number; but for the purpose of explaining our theory we found the nine stages given sufficient.

In conclusion we may remark that, notwithstanding Mr. Seebohm's decision, we are still of opinion that our theory is correct, but we leave the readers of 'The Ibis' to judge for themselves.

E. A. Butler.
H. W. Feilden.
S. G. Reid.

5th September, 1887.

Emin Pacha on the Birds of Lake Albert, Eastern Equatorial Africa.—"All along the river and in the lake I was struck with the relatively small number of species of water-birds. Further north, in the Bahr-el-Abiad, between 12° and 15° north lat., water-birds and marsh-birds occur in innumerable flocks, while to the south, in the localities mentioned, one cannot find a single duck or a single goose. And although we can explain this marked difference, for the winter-season (November to March) at least, by the fact that large numbers of European emigrants on their way to the south do not proceed beyond the marshy track between Sobat and Ghaba Shambé, still this will not account for the paucity of species and of numbers of species which do occur in localities that are so eminently suited for them further south. *Ardea alba* and *A. comata* went on fishing around the steamer, quite regardless of the bustle; and a little further away I noticed specimens of *Anastomus lamelligerus, Plotus levaillanti,* and *Phalacrocorax africanus.* A few jabirus (*Mycteria senegalensis*) were searching an inundated, low-lying piece of land; and, on the margin of the lake, a few Egyptian Geese (*Chenalopex ægyptiacus*) showed themselves. With the Pelicans mentioned above as having been observed in the river I close the list. Not a single plover was seen, nor yet a strand-snipe or a duck."—(Extract from 'The Scottish Geographical Magazine,' June 1887, p. 276.)

Nesting of the Nutcracker (Nucifraga caryocatactes).—In the Mitth. d. Orn. Ver. in Wien (xi. Jahrg. nr. 5 & 6), Herr Edm. Pfanni has given an interesting account of his adventures after Nutcrackers' nests in Lower Austria, near Lilienfeld. As is well known, the difficulty with this bird is that it breeds very early in the season, before the winter's snow is off the ground in the inclement regions which this bird frequents, and, indeed, it begins to nest while fresh snow is still falling. After several unsuccessful attempts, Herr Pfanni began a new search on the 17th March, in a large pine forest in which he had seen young Nutcrackers the previous summer, and in which he was therefore pretty certain that this bird must breed. In spite of the trees being covered with fresh snow and the great cold, many trees with nests in them were found and ascended. But most of these nests appeared to be old squirrels' dreys. The next day, in the same forest, after several hours' search, he discovered what appeared to be in all probability a two-years old nest of the Nutcracker. It was placed on a pine about 15 feet from the ground, and corresponded in every way to undoubted nests of Nutcrackers that had been taken in Switzerland. But this was as far as could be got on the 18th and 19th of March. On the 20th came a warm day, and the snow disappeared from the trees. The morning was spent in rain in a neighbouring wood of mixed trees. In the afternoon Herr Pfanni resolved, as a last resource, to devote himself to a steep south-eastern sloping hanger, in which patches of pine-forest were mixed with other trees and clearings. At 2 o'clock he left the house, and after a walk of three quarters of an hour began the search, taking one group of pines after another. He had been at work about half an hour, when at a lighter spot in a clump of firs he observed above him a thick place in the foliage which appeared to be a nest, and on careful observation descried what appeared to be a bird's tail protruding therefrom. Upon pelting the nest with snowballs, the tail suddenly vanished and the head and bill of a Nutcracker appeared in its place. When his excitement at this discovery had somewhat cooled down, Herr Pfanni endeavoured to frighten the bird off her nest by clapping his hands. This manœuvre proving ineffectual, he climbed up a neighbouring beech tree to about the same height as the nest, and only when he could just see into it did the mother quickly and silently glide off. Two eggs, not quite alike, lay in it. Thinking more eggs would be laid, and wishing his companion, Herr Reiser, to see the nest, he left the spot. On returning next day, Herr Pfanni saw the bird quit her post in exactly the same fashion as on the previous occasion. The eggs had not increased in number, and it was evident that the bird was sitting hard.

Herr Reiser, who accompanied Herr Pfanni when the eggs were finally taken, adds to the paper some notes on the structure of the nest and eggs. The nest was placed about 15 feet from the ground, upon the branches of a pine some 21 feet high, on the side of the tree facing the valley; it was composed of twigs of the larch, bird-cherry, and other trees, and lined with dried grasses and straws and a few roots, but with very little moss, and was smaller in size than is usual with this bird. The eggs were very like those of the Jackdaw; even when examined with a magnifier they showed but little difference. Taken on March 23rd, they appeared to have been incubated about five or six days; they differed slightly from one another in size, shape, and markings, of which exact particulars are recorded by Herr Reiser.

A new Fossil Bird from the Wealden.—In the May number of the 'Quarterly Journal of the Geological Society' (p. 206), Prof. H. G. Seeley founds a new type of bird, *Ornithodesmus cluniculus,* on some remains from the Wealden in the British Museum. The differences which the fossil shows from existing birds are three: first, the small number of vertebræ in the sacrum; secondly, the absence of the sacral recesses from the middle lobes of the kidneys; and, thirdly, the form of the articular face of the first sacral vertebra. Fossil birds lessen the importance of these differences: first the *Archæopteryx* has as few vertebræ in the sacrum, while *Ichthyornis dispar* has no renal recesses in the middle of the sacrum; and the Gannet makes a sufficiently near approximation to the form of the articulation to remove any improbability as to its being a modified avian form. Prof. Seeley submits, on the evidence of the resemblances and considerations which he discusses, that *Ornithodesmus* was probably a bird, but that it differed from existing birds so as to suggest that it was a link towards lower forms. It cannot be placed in any existing division of the class, but approximates towards the Dinosaurs in a way of which no bird had previously given evidence.

Guácharo-shooting in Trinidad.—The Report of the U.S. Fish-Commission for 1884 contains an interesting narrative of the cruise of the steamer 'Albatross' in the Caribbean Sea in the early months of that year, prepared by Mr. Benedict, the naturalist of the expedition. From Port of Spain, Trinidad, an excursion was made to the caves of the Guácharo-bird (*Steatornis caripensis*), which are described as follows:—

"At half-past 7 on the morning of February 1, Captain Tanner and four members of the scientific staff left the ship in the steam-launch for Mono Island, 10 miles distant, and near where the birds we were in search of live in caves. When nearly there Mr. Garrett and Mr. Ackerman were left on a small island to collect until the return of the launch. The others kept on to Mono Island, where the captain found Mr. Morrison, to whom he had been directed as the best guide to the caves. Mr. Morrison consented to go with us in search of the birds.

"From this place we steamed around the island to Trinidad, and tried to enter a cave there inhabited by the Guácharo-birds. The larger caves on Huevos Island were then too much exposed to the ocean to be accessible, and at any season can be approached only on occasional days, when the water is very smooth.

"We found the cave on the western side of Trinidad too much exposed to enter with anything like safety, though several attempts were made. We were finally obliged to give it up, to our great disappointment. The entire floor of the cave is water. As a swell advances inwards, innocent at first, it becomes angry and dangerous long before it reaches the farther end, where it brings up with a heavy booming sound, leaving jagged rocks briefly exposed in its wake. The entrance to the chamber where the birds live is about 10 feet high, 12 feet wide at the bottom, and 50 feet long. The chamber is about 40 feet in diameter at its base and 35 feet high. A coloured man was employed to take us in in his canoe. Mr. Morrison assisted in the management of it, while Mr. Nye and myself held our guns in readiness. We were backed in about 35 feet, when a breaker boarded us, half filling the canoe with water, and we came out as soon as possible. The canoe being too heavily loaded, I got out, and the others went in again. This time Mr. Nye succeeded in shooting two birds, but before he could secure them another breaker boarded them, and again partly filled the boat. The swells becoming heavier, we considered it unsafe to venture into the cave again; however,being very desirous of obtaining the birds, we adopted another plan, which was to shoot them as they came out at night. Captain Tanner thought well of this and went back to the ship, leaving Mr. Nye and myself to carry out the plan, with Mr. Morrison's assistance, at whose house the greater part of the afternoon was pleasantly spent. Towards night we went into a grove of cocoanut-palms and killed a number of birds. Before dark we were again at the cave in a canoe. Mr. Nye landed and obtained as good a position as the nature of the ground would allow, while I remained in the boat near the cave to shoot as best I could against the face of the precipitous hill which rises above it. The birds did not come out until after dark, when it was possible to see them only against the sky. Nevertheless, Mr. Nye killed two, only one of which was recovered, and that after it had been in the water for half an hour."

Important Additions to the New York Museum.—We learn from the July No. of 'The Auk' that the American Museum of Natural History of New York City has recently received several important additions to the Department of Ornithology. One of these is the acquisition by presentation of Mr. D. G. Elliot's superb collection of Humming-birds, numbering over 400 species, represented by about 2000 specimens, and including some fifty or more types, a collection which formed the basis of his recent monograph of the family. Next comes the addition, by purchase, of Mr. George N. Lawrence's collection, comprising about 3000 species and some 300 types of birds from North America, Mexico, the West Indies, Central and South America—a reference collection of high value, inasmuch as it contains the types of nearly all the species described by our veteran Foreign Member. By purchase also the Museum has acquired 4000 bird-skins, belonging to about 300 species, with about 150 clutches of identified eggs, obtained by Mr. H. Smith in the province of Matto Grosso, Brazil (*suprà*, p. 244). In the exhibition-series of birds, eighteen elaborate "group pieces," arranged in twelve cases placed in the alcoves of the "Bird Floor," illustrate the nesting-habits of the species represented, after the plan adopted in our Natural History Museum at Kensington. The funds for these groups, and for some twenty more which will be added in the course of the year, are supplied by the generosity of Mrs. Robert E. Stuart, an atonement-offering for the sins of the American plume-wearers, which may be recommended for imitation by English ladies. Lastly, Mr. D. G. Elliot's fine ornithological library, comprising about 1000 volumes, has been purchased and presented to the Museum by Messrs. Cornelius Vanderbilt and Percy R. Pyne, two of its trustees. We heartily congratulate Professor J. A. Allen on these acquisitions by the Department over which he so worthily presides.

OBITUARY.—We regret to record the death of a promising young naturalist, Mr. THOMAS HENRY BOWYER BOWER, who was already known for his explorations in the interior of Queensland, where he procured many interesting species, among the principal being *Cracticus rufescens* and *Scenopæus dentirostris*. Last year he proceeded to Western Australia, accompanied by Mr. Walter Burton, and made large collections on the Fitzroy River, the bulk of which, however, were lost by a disastrous fire in the camp; and he unfortunately contracted a sharp attack of fever, which developed into typhoid at Port Darwin, where he died last January in his twenty-fifth year. His father, Capt. Bowyer Bower, has presented nearly the whole of his son's collection to the British Museum.

Sir JULIUS VON HAAST, K.C.M.G., F.R.S., who died suddenly at Bonn (his birthplace) on the 15th of August last, was for years a prominent figure among the zoologists of New Zealand. Born in 1824, he accompanied Professor Hochstetter on the 'Novara' Expedition in 1858, and subsequently, as Director of the Canterbury Museum, Christchurch, he did excellent scientific work. From the purely ornithological point of view he will be remembered in connexion with his researches on the extinction of *Dinornis*; but his loss will be felt by many who experienced his courtesy last year at the Colonial Exhibition.

By the death of Professor SPENCER FULLERTON BAIRD the British Ornithologists' Union has lost one of the oldest of its Honorary Members. Born at Reading, Pennsylvania, on February 3, 1823, he formed in 1838 a friendship with Audubon, who, in 1842, handed over to the young naturalist the greater part of his collection of birds, including many types of new species. The first printed paper which bears his name is a description of two new species of Flycatchers in 1843, and in 1846 he was engaged in the preparation of a synonymy of North American birds. In 1850 he was appointed Assistant-Secretary at the Smithsonian Institution, Washington, succeeding to the secretaryship upon the death of Professor Henry in 1878. Such standard works as 'The Birds of North America' (1858), the 'Review of North American Birds,' and the 'History of North American Birds' (1874–84), the latter in conjunction with the late Dr. Brewer and Mr. R. Ridgway, testify to his ornithological attainments; while the flourishing condition of the Smithsonian Institution, and of the United States National Museum, of which he was also Director as well as Fisheries Commissioner, prove his enormous capacity for organization. His death, which took place at Wood's Holl, Massachusetts, on August 22nd last, will be deeply regretted, especially by those who enjoyed the privilege of his personal acquaintance.

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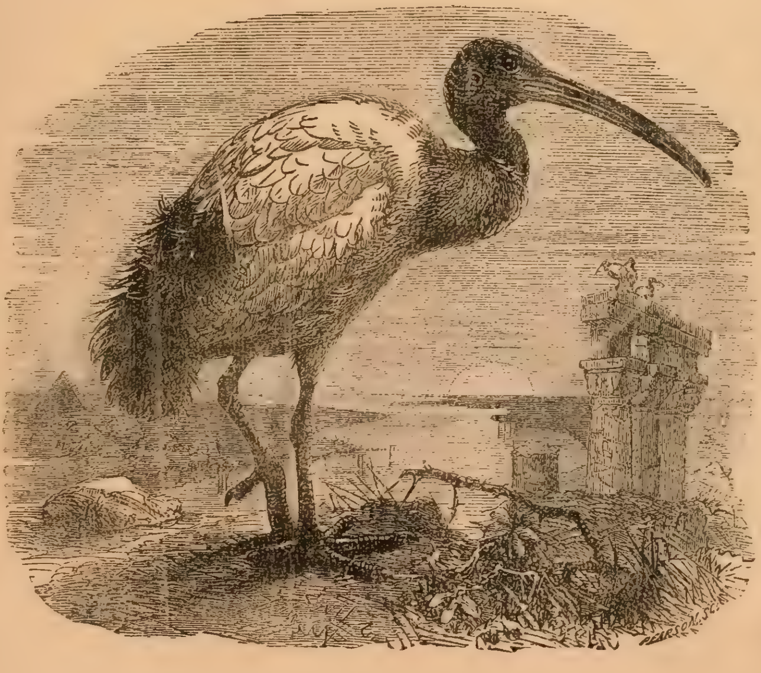

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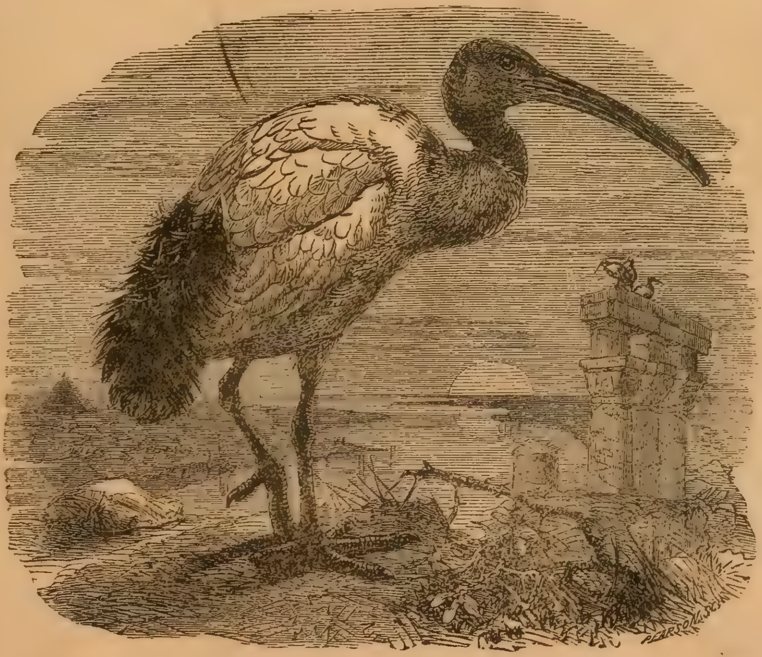

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